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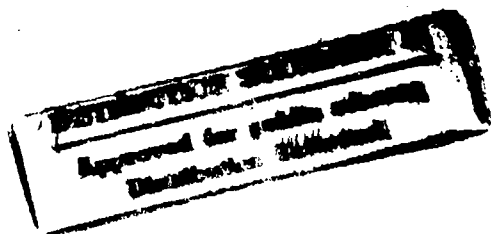


***Analysis of Thermal Imagery  
Collected at Grayling II  
Grayling, Michigan***



Salvador Rivera, Jr.

U.S. Army Engineer Waterways Experiment Station  
Vicksburg, MS



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SWOE Report 94-9

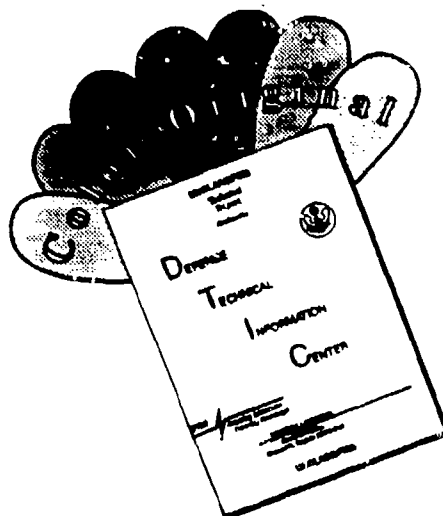
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## FOREWORD

SWOE Report 94-9, November 1994, was prepared by S. Rivera, Jr. of U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

This report is a contribution to the Smart Weapons Operability Enhancement (SWOE) Program. SWOE is a coordinated, Army, Navy, Marine Corps and Air Force program initiated to enhance performance of future smart weapon systems.

Performance of smart weapons can vary widely, depending on the environment in which the systems operate. Temporal and spatial dynamics can significantly impact weapon performance. Testing of developmental weapon systems has been limited to a few selected combinations of targets and environmental conditions, primarily because of the high costs of full-scale field tests and limited access to the areas or events for which performance data are required.

Performance predictions are needed for a broad range of possible battlefield environmental conditions and targets. Meeting this need takes advantage of significant DoD investments by Army, Navy, Marine Corps, Air Force and ARPA in 1) basic and applied environmental research, data collection, analysis, modeling and rendering capabilities, 2) extensive target measurement capabilities and geometry models, and 3) currently available computational capabilities.

SWOE is developing, validating, and demonstrating the capability to handle complex target and background environment interactions for a broad range of battlefield conditions. SWOE is providing the DoD smart weapons and autonomous target recognition (ATR) communities with measurements, information bases, modeling and scene rendering techniques for complex environments. These are products of a DoD-wide partnership that works in concert with both advanced weapon system developers and major weapon system test and evaluation programs.

The SWOE program started in FY89 under Balanced Technology Initiative (BTI) sponsorship. Present sponsorship is by the U.S. Army Corps of Engineers (lead service), the individual services, and the Joint Test and Evaluation (JT&E) program of the Office of the Director of Test & Evaluation, Office of the Under Secretary of Defense OUSD(A/DT&E).

The Joint Test Director is Dr. J.P. Welsh. The Deputy Test Directors are: COL Jerre Wilson (U.S. Army) and Maj Richard Jennings (U.S. Air Force). The Modeling Configuration Manager is Dr. George G. Koenig.

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# Preface

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The analysis activities reported herein were conducted by the U.S. Army Engineer Waterways Experiment Station (WES) in support of the Smart Weapons Operability Enhancement (SWOE) Joint Test and Evaluation (JT&E) Grayling II exercise conducted at Grayling, Michigan, from 4 March to 15 April 1994. This effort was funded by the Secretary of Defense SWOE JT&E Program Office, Hanover, NH. Dr. J. Pat Welsh was the Joint Test Director, and LTC Jerre W. Wilson was the Army Deputy Director.

WES has prepared three related reports in support of the Grayling II exercise for the SWOE/JT&E Program. These are as follows:

- a. "Grayling II Information Base for Generation of Synthetic Thermal Scenes"
- b. "Grayling II Site Characterization and Data Summary"
- c. "Analysis of Thermal Imagery Collected at Grayling II, Grayling, Michigan"

This study was conducted under the general supervision of Dr. John W. Keeley, Director, Environmental Laboratory (EL), WES; Dr. Robert M. Engler, Chief, Natural Resources Division (NRD), EL; and Mr. Harold W. West, Chief, Environmental Characterization Branch (ECB), NRD; and under the direct supervision of Mr. Charles D. Hahn, WES project coordinator. Mr. Salvador Rivera, Jr., ECB, NRD, prepared this report. Field measurement support was provided by Messrs. Hahn, Thomas E. Berry, M. Joe Wooley, Clarence Currie, and Jerrell R. Ballard, Jr., ECB, and Messrs. David Leese and Paul Dew of Instrumentation Services Division, WES.

At the time of publication of this report, Director of WES was Dr. Robert W. Whalin. Commander was COL Bruce K. Howard, EN.



# 1 Introduction

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The Smart Weapons Operability Enhancement (SWOE) Joint Test and Evaluation (JT&E) Program is a Department of Defense (DOD) coordinated multiservice effort to address problems related to smart weapon system development, test, and evaluation (DT&E) in the worldwide range of battlefield environment conditions. The thrust of the Grayling II field exercise was to collect environmental data necessary to generate various synthetic thermal scenes and to collect thermal infrared image data for use in the validation of the SWOE thermal scene generation procedure.

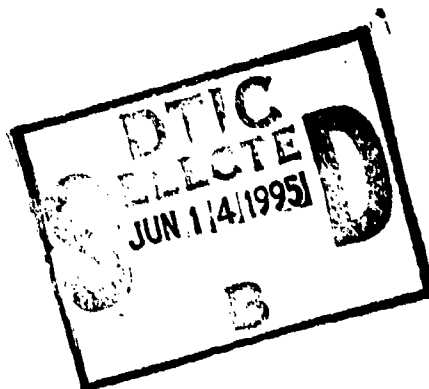
## Background

Future smart weapons systems will be forced to become more "autonomous" because of the ever-shrinking manpower available on the modern battlefield. The typical approach to developing smart weapons has been the test-fix-test methodology for the test and evaluation phases of development. Tests or technology demonstrations are scheduled, and the proposed system is thoroughly tested under various environmental conditions. The results, however, may not be similar if the environmental conditions are changed. Also, the cost of this type of testing is extremely high. The primary thrust of the SWOE, JT&E program is to produce a validated procedure for generation of synthetic thermal and millimeter wave image that accurately "model" the environmental conditions and can then be processed through the sensor and sensor logic to produce results representative of those from a weapon system captive-flight demonstration, all at a much lower cost. An added benefit of this analytical procedure allows evolution of environmental effects so that the sensor logic may be evaluated over a variety of background and weather conditions quickly and efficiently.

# **Analysis of Thermal Imagery Collected at Grayling II Grayling, Michigan**

**Salvador Rivera, Jr.**

**U. S. Army Engineer Waterways Experiment Station  
Vicksburg, MS**



**SWOE Report 94-9  
November 1994**

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## **Objectives**

The objectives of this report were as follows:

- a.* To conduct an analysis of thermal data, collected by the U.S. Army Engineer Waterways Experiment Station (WES) during the Grayling II field program exercise at Grayling, MI, during 04Mar-15Apr94, to understand variations in terrain features' infrared (IR) signatures and to present the data in a format that could be used for synthetic image validation tasks.
- b.* To present in graphical format the meteorological data collected at the time the IR imagery data were collected.

## **Scope**

The intent of this report is to describe procedures and analyses of WES infrared imagery collected during the Grayling II exercise, Grayling, MI. The data and results are presented in a format useful for synthetic image validation tasks. The WES image data discussed herein are to be stored in the SWOE program database and made available to the DT&E community.

## 2 Geography and Image Data Presentation

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### Site Description

The SWOE Grayling II area was divided into five data collection sites (see Figure 1 for Grayling II site layout): Site E (universal transverse Mercator (UTM) coordinates 68724E 5951961N), the primary imaging and data collection area; Site C (UTM coordinates 687625E 4951970N), a forested area; Site D (UTM coordinates 687382E 4952683N), a deciduous tree area on the west side of the valley; Site F (UTM coordinates 687934E 4952683N), a south-facing hillside with scattered trees and grasses; and Site A.1 (UTM coordinates 687067E 4952031N), the location of the data collection facilities and support trailers. Site E and the surrounding area was primarily flat with a few small (<1 m) topographic undulations. Vegetation consisted primarily of grasses with scattered deciduous (red and black oak) and coniferous (jack pine) trees and plants. Figure 2 presents a panoramic view of Site E and surrounding area taken from the WES trailer position (see Figure 1). In addition, an elevation contour map of the Grayling II area is presented in Figure 3. A detailed discussion of the site description is presented in another report.<sup>1</sup>

### WES Infrared System and Imaging Procedure

During the Grayling II field program exercise (04Mar-15Apr94), WES collected IR image data, long wave band (LWB) 8 to 12  $\mu\text{m}$  and short wave band (SWB), 2 to 5.6  $\mu\text{m}$ , on representative terrain features. WES used an Agema 900 Thermovision system to collect high-resolution imagery of several terrain features using a narrow field of view (FOV) (2.5 deg). The 900 system consisted of an LWB and a SWB thermal imager

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<sup>1</sup> Hahn, C. D. (1994). "Grayling II site characterization and data summary," Technical Report prepared by the U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, for the Smart Weapons Operability Enhancement Joint Test and Evaluation Program Office, Hanover, NH.

connected to a specialized computer. Table 1 shows the specifications for the WES IR equipment. The cameras were mounted on a computer-controlled mount that allowed for 360 deg of azimuth rotation and approximately 70 deg of elevation change. The cameras were attached to the boom of a WES boom truck, and this mount was programmed to allow automatic positioning and imaging of specific terrain features located within the designated imaging area. During the Grayling II exercise, WES recorded most of the daytime missions on Video Home System (VHS) videotapes.

SWOE image data were collected with several different ground-based IR systems, one airborne IR and millimeter wave band system, and one ground-based active millimeter wave band system by the following agencies: WES, the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL), U.S. Army Research Laboratory (ARL)-Battlefield Environment Directorate (BED), Eglin Air Force Base (EAFB), and ARL-Signals, Sensor, System and Intelligence (S<sup>3</sup>I) Directorate. During Grayling II, WES collected high-resolution IR imagery (LWB and SWB) on 12 designated terrain features (See next section for terrain features description). Terrain feature IR imagery was collected for various planned 1-hr missions.

A typical 1-hr mission involved imaging 12 predetermined terrain features and collecting one frame per wave band (LWB and SWB) at the measurement times. The 12 terrain features imaged are described in the next section. For each typical 1-hr mission, 12 measurement times (also known as scheduled minutes) were randomly selected and used as the IR data collection schedule. The 12 terrain features were divided into two groups of seven and five features. Features' IR imagery were collected on the first seven features at odd scheduled minutes (1st, 3rd,... and 11th) and on the next five features at even scheduled minutes (2nd, 4th,... and 12th). Consequently, each of these features were imaged six times during the 1-hr mission. Table 2 shows the schedule followed for all 172 one-hour SWOE missions; Table 3 shows the 12 scheduled minutes for each of the 172 one-hour missions. The numbers shown in Table 3 (columns 6-17) represent the number of minutes that elapsed after the start of the mission hour (column 4) before a set of images were collected. For example, for mission number 1 (column 3), the first seven feature images (LWB and SWB each) were collected in the 4th minute of hour number 15. The next five features were imaged in the 7th minute of hour number 15.

One scheduled minute from the twelve was randomly selected, and the IR imagery collected at that measurement time was referred to as the critical image set (See Table 3, column 5); this report refers to the IR imagery collected by WES during the nearest measurement time to the critical image set as the nearest critical image set. IR imagery collected within the critical image set and the nearest critical image set are the only data used in the discussion of Analysis of Terrain Features' IR Imagery section.

Throughout the Grayling II exercise, WES collected IR data for 140 of the 172 scheduled SWOE missions, resulting in a total of 20,160 images. The following is a summary of IR imagery collected:

- a. During odd scheduled minutes:  
 $140 \text{ Missions} \times 6 \text{ Measurements/hr} \times 2 \text{ wave bands}$   
 $\times 7 \text{ Features} = 11,760 \text{ Feature Images}$
- b. During even scheduled minutes:  
 $140 \text{ Missions} \times 6 \text{ Measurements/hr} \times 2 \text{ wave bands}$   
 $\times 5 \text{ Features} = 8,400 \text{ Feature Images}$

## **Description and Location of Terrain Features Imaged**

Seven different terrain features were imaged by WES as follows:

- a. Sandy bare soil (i.e., vehicle-test track).
- b. Grass (dormant).
- c. Snow over grass.
- d. Deciduous (red oak) tree.
- e. Deciduous (black oak) treeline.
- f. Coniferous (pine) tree.
- g. Coniferous (pine) treeline.

Figure 4 contains color photographs and IR images (LWB) of the 12 features imaged. The first 10 features were located within Site E and/or adjacent to Site E; feature 11 was located at Site F; and feature 12 was located at Site D (see contour map in Figure 3). Each feature was enclosed by a polygon in both the color photograph and the IR image. It is noteworthy that the color photographs and IR images were not collected from the same view point. Most of the color photographs (features 1-10) were taken approximately 9 to 17 m away from the feature and just above (eye) ground level (height 2 m), while the IR images were collected with the WES IR cameras, which were mounted approximately 19 m above ground from the top of a hill. The IR camera was approximately 30 m above the ground elevation of Site E, which results in an imaging angle of approximately 10 deg below the horizontal. Therefore, the background of the terrain features in the color photographs is shown as sky, while the background in the IR images is either grass or bare soil (sand).

The IR images were obtained using a 2.50- by 1.25-deg FOV lens. The location of the WES imagers was at UTM coordinates 687089 easting and 4951933 northing. UTM coordinates and relative angles (from imagers to terrain feature) are included in Table 4.

### 3 Meteorological Conditions

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IR data were collected under a variety of meteorological conditions that affect the IR signatures (thermal properties) of the terrain features. The purpose of this chapter is to summarize by plots (Figure 5) and listings (Appendix A) some of the meteorological conditions that occurred during the Grayling II exercise (04MAR93-15APR94). Meteorological data discussed in this chapter, collected and provided by CRREL, include air temperature ( $^{\circ}\text{C}$ ), solar radiation (watts/square meters), relative humidity (percent), barometric pressure (millibars), wind speed (miles/second), wind direction (degrees), visibility (kilometers) and rain precipitation (millimeters/hour). Data from the meteorological station located at Site E3 (see Figure 3) were used; data were collected every minute throughout the 43-day period. The meteorological data presented in this part were averaged over an hour (See Appendix A for listing). Throughout the Grayling II exercise, both rain and snow precipitation occurred; therefore, terrain features were either totally covered, partly covered, or not covered by snow.

Figure 5 depicts measured meteorological conditions throughout the test period. Figure 5a shows that air temperature values varied between  $-20^{\circ}\text{C}$  (19MAR) and  $+20^{\circ}\text{C}$  (14APR). For most of the days, air temperature oscillated from a minimum temperature early in the morning, rising throughout the day until it reached its peak temperature about noon, then decreased slowly during the rest of the day until completing the cycle. Of the 43 days of data collection, there were many sunny, partly cloudy and cloudy days (Figure 5a). Maximum solar radiation values varied between 200 and  $800\text{ W/m}^2$  for cloudy/overcast and sunny days, respectively.

Relative humidity (Figure 5b) fluctuated considerably throughout the duration of the exercise (20 to 100 percent). Most of the minimum values occurred toward the end of the exercise (after 31MAR). The barometric pressure (Figure 5b) showed very little fluctuation (950 to 990 mb) throughout the 43-day measurement period.

The wind speed (Figure 5c) fluctuated between 0 and 6 m/s with the highest wind speed occurring on 15MAR. Wind speed varied considerably from day to day exhibiting high speeds (3 m/s or more) on a given day and slow speeds (3 m/s or less) on the next day. The wind direction



(Figure 5c) most of the time was in a northerly direction (0 deg = NORTH and 90 deg = EAST).

Visibility (Figure 5d) varied between 0 and 50 km. Many days exhibited visibility below 5 km because of heavy snow precipitation, rain precipitation, or foggy conditions. Of the 43 days of data collection, approximately 12 days exhibited some type of precipitation. The following 8 days exhibited both rain/snow precipitation and low visibility: 12MAR, 18MAR, 21MAR, 27MAR, 29MAR, 05APR, 13APR, and 15APR.

## **4 Analysis of IR-Measured Data**

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### **IR Imagery Processing Procedure**

The flowchart in Figure 6 describes the procedure used to process all of the WES imagery collected during the Grayling II exercise. The four general steps of the procedure are presented in the following paragraphs.

First, 12 IR LWB images containing the terrain features were individually displayed on a computer screen; a polygon delineating the designated terrain feature was digitized (Figure 4). The coordinates of these feature-polygons, also known as general feature-polygons, were stored for use in the second step.

Second, each terrain feature image to be processed was displayed on a computer screen with the corresponding general feature-polygon superimposed. At this point, if necessary, the analyst could shift the polygon around (with arrow keys/mouse) to make sure it enclosed the designated terrain feature. Then, polygon coordinates of each terrain feature were stored in a separate file. Each terrain feature was processed separately during this step of the procedure. At the end, all the terrain features' IR images had their individual polygon coordinate file.

Third, image metrics (described in the next section) were computed on all the feature-polygon by using all of the pixels within the polygon. Image metric results were then stored in a database for interpretation and analysis.

Fourth, terrain feature IR imagery analysis was performed by graphical analysis and interpretation of the image metric results.

## Image Metrics Computation

Image metrics refers to the process and results of quantifying the distribution of specific features within a digital image. Image metric parameters were used in this study to analyze and compare terrain features' IR signatures. The image metric parameters used in this report are valid for any distribution; their validity does not depend on normality of the underlying temperature distribution. Inspection of temperature histogram charts suggests that the distributions are far from normal during much of the day.<sup>1</sup>

Image metrics were used to describe the distribution of specific terrain features within a digital image. Ten different scene metrics were computed; all characterize the data-space distribution of temperature (°C). These 10 measures were computed from the terrain feature temperature distribution histograms: the minimum value (MIN), the 5-percentile value (PERC\_05), the median value (MEDIAN), the mode value (MODE), the 95-percentile value (PERC\_95), the maximum value (MAX), and the difference between the 95- and 5-percentile (RNG\_90). The first, second, and third moments of the distribution of temperature values within the designated region (mean, standard deviation, and skewness) are also computed.

The metrics mean, median, and mode were used to measure the central tendency of feature temperature distributions. The metrics standard deviation and RNG\_90 were computed to measure the thermal variability of these terrain features throughout the day. The metric standard deviation describes the spread of the data points from the mean value of the population, while the RNG\_90 implies that 90 percent of the temperatures have a range of so many degrees. Finally, the metric skewness is the degree of asymmetry, or departure from symmetry, of a terrain feature temperature distribution. A positive value means that the distribution has a longer tail to the right of the central maximum or that the distribution is skewed toward warmer temperatures than the central maximum temperature. A negative number means that the distribution has a longer tail to the left of the central maximum or that the distribution is skewed toward temperatures cooler than the central maximum temperature. A value of zero means that the distribution is symmetrical on both sides of the central maximum temperature.

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<sup>1</sup> Rivera, S., Jr. (1994). "Analysis of thermal imagery collected at Yuma 1, Yuma, AZ," Technical Report prepared by the U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS, for the Smart Weapons Operability Enhancement Joint Test and Evaluation Program Office, Hanover, NH.

## **Image Characterization by Mission**

During the Grayling II exercise, WES recorded most of the day time missions on VHS videotapes. These videotapes were used to visually determine whether the terrain features were completely, partially, or not covered by snow during each mission and whether or not snow or rain precipitation occurred. Sometimes, for nighttime missions, terrain features' snow coverage could also be determined by viewing video data recorded during the previous day and the day after. The information gathered from these video data is summarized in Table 5.

Table 5 contains the following column headings: mission number, mission date, mission starting time, whether there is video data available (Yes/No), the 12 terrain features in situ conditions, and comments. The terrain features' condition was classified by the analyst into the following four classes: (a) total snow coverage (TC)—feature covered 100 percent by snow, (b) partial snow cover (PC)—patches of snow on the feature (i.e., grass or test track), (c) no visible snow or water (NV)—no visible either snow or water cumulated on the feature, (d) and standing water (SW)—small pond or puddle of water because of a recent rainfall event. An estimation, if possible, was also made for those missions where no video data were available. (No data were collected for missions not listed in the table because of equipment problems).

## **Analysis of Terrain Features' IR Imagery**

Meteorological conditions that occurred at the time of execution of the 1-hr SWOE imaging missions are presented and discussed in Chapter 3 of this report. Also, see Infrared System and Data Collection Procedures section for a description of the IR imagery collected during missions.

For each 1-hr mission executed, only the terrain feature IR imagery collected during both the critical image set and the nearest critical image set were processed and analyzed (the remaining data are stored on a storage media at WES); this ensured that IR imagery collected at both odd and even scheduled minutes were analyzed. Consequently, for each SWOE scheduled 1-hr mission, 24 IR images (12 LWB and 12 SWB) of terrain features were processed and analyzed. Table 6 illustrates the seven terrain features (see Figure 4 for color pictures of terrain features) selected for analysis. Terrain features not included in Table 6 were processed and metrics were computed; no additional analyses were conducted on these features.

The image metric results obtained from the processed terrain feature IR imagery and the meteorological data collected at the time of the imagery (to the near minute) are presented in Appendix B.

### **Terrain features' IR signatures by time of day**

A "daily" comparison of the calculated image metrics was not possible because (a) data collection was limited to only four random selected 1-hr measurement (time) periods per day (see Table 2), and (b) meteorological conditions varied from day to day during the 43-day exercise. Since IR mission data were collected at random 1-hr times, it was decided to group the feature signature data into four different 6-hr time spans depending on when the missions were executed:

- a. Interval 1: 00:00 to 06:00 hr.
- b. Interval 2: 06:01 to 12:00 hr.
- c. Interval 3: 12:01 to 18:00 hr.
- d. Interval 4: 18:01 to 24:00 hr.

Graphics of mean temperature versus standard deviation were used to illustrate the temperature range and the variability of the feature thermal data within time intervals during the 43 days of the exercise. Figure 7 presents plots of mean temperature versus standard deviation (thermal variability) in each wave band (LWB and SWB) for the seven selected terrain features. Table 6 was used to determine the missions that contained no appreciable snow accumulation on six of the features; the only exception was the snow cover feature that contained snow accumulation (either partial or total coverage). Only data from these missions were used in Figure 7. A summary of Figure 7 is presented in Table 7.

These plots were used to (a) determine whether there was a pattern within each interval in terrain features' IR signatures, (b) determine similarities or differences among the four 6-hr time periods, (c) and to determine the range of terrain features' mean temperatures and thermal variability during the 43 days of the exercise.

As presented in Figure 7, some thermal signature patterns observed (in all seven terrain features) were as follows: (a) cooler mean temperatures were found within interval 1, (b) warmest mean temperatures and higher variability were found within interval 3, (c) minimum variability was not unique to any interval, and (d) when comparing both wave bands within any interval, the LWB feature data exhibited cooler mean temperatures and slightly less thermal variability than the SWB data.

Figure 7a depicts the LWB thermal signatures exhibited by the seven terrain features (see Table 7 for a summary). In general, the sandy vehicle-test track followed by the grass feature exhibited warmer mean temperatures (see average on Table 7) than the other five measured terrain features throughout the 24-hr day (especially between 1201 and 1800 hr). In addition, the sandy vehicle-test track followed by the deciduous (red oak) tree feature exhibited higher thermal variability. A point worthy of noting was

that the deciduous (red oak) tree had no leaves; therefore, many of the signatures inside the polygon were partly due to a sandy-grass "background" material (see photograph in Figure 4). As expected, the snow cover feature exhibited the coolest mean temperatures (min=-27 °C, max=0 °C) and similar thermal variability compared with the other features. At any time of the day, the coniferous tree and the coniferous treeline exhibited very similar mean temperatures and thermal variability. When comparing LWB feature signature with SWB feature signature (within each interval), the LWB data always exhibited cooler mean temperatures and slightly less thermal variability (see Table 7).

### **Terrain features' IR signatures throughout exercise**

Figures 8-14 show the feature IR signatures in both wave bands throughout the 43 days of the Grayling II exercise. The features' mean temperature bounded by the standard deviation were included to illustrate both the range of mean temperature values and the thermal variability of the different features. The air temperature was also included for comparison. These plots include all the IR data collected on the seven features. Therefore, it is important to remember that these features were either totally, partially, or not covered by snow or water. Refer to Figure 5 (meteorological plots) and Table 6 (Image Characterization by Mission Using Video Data) for information on both meteorological conditions and the features' in situ snow cover status.

Figures 8-14 reflect that features' mean temperatures as well as air temperature varied considerably throughout the exercise. As expected, LWB feature signatures followed closer to the air temperature than the SWB signatures. When comparing SWB signatures with LWB signatures, the SWB data exhibited warmer mean temperatures and slightly more thermal variability. Also, cooler mean temperatures were exhibited before 21MAR for all features. On the contrary, warmer mean temperatures were exhibited between 31MAR and 03APR and toward the end of the exercise (14APR).

The coniferous tree, coniferous treeline, and deciduous treeline followed closer to the air temperature than the deciduous tree and the three ground-based features (sandy soil test track, grass, and snow). As mentioned before, the deciduous tree was a multistem large leafless red oak tree; therefore, many of the pixels signatures were for sandy-grass "background" material (see Figure 4).

## 5 Summary of Results

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During the Grayling II exercise, WES collected approximately 20,160 IR images on representative terrain features. A total of approximately 1,960 IR images were analyzed and discussed in this report. Thermal signature data in both wave bands (3 to 5  $\mu\text{m}$  and 8 to 12  $\mu\text{m}$ ) were collected and analyzed on seven terrain features, including a sandy vehicle-test track (i.e., bare soil), grass, snow cover or/and grass, deciduous tree, deciduous treeline, coniferous tree, and coniferous treeline. These seven features were considered the dominant features within the 1.42- by 1.22-km Grayling area.

Image metrics were computed including minimum, mode, median, mean, maximum, 5-, 95-, 90-percentile range, standard deviation, and skewness. Meteorological data and image metric results are presented. These image metrics were used to determine the central tendency and thermal variability of the terrain features' temperature distribution. A database was generated containing information about terrain feature attribute data, image metrics results, and meteorological data.

IR data were collected under a variety of meteorological conditions that affect the IR signatures of the terrain features. Meteorological data presented and discussed include air temperature ( $^{\circ}\text{C}$ ), solar radiation (watts/square meter), relative humidity (percent), barometric pressure (millibars), wind speed (miles/second), wind direction (degrees), visibility (kilometers), and rain precipitation (millimeters/hour). Throughout the Grayling II exercise, both rain and snow precipitation occurred; therefore, terrain features imaged were either totally covered, partly covered, or not covered by snow. SWOE missions were visually characterized (by using video data) and determined whether the terrain features were completely, partially, or not covered by snow, and also whether or not snow or rain precipitation occurred during the mission.

Terrain feature IR imagery collected during the randomly selected 1-hr mission times were analyzed in two ways: (a) terrain features' IR signatures by time of day, (b) and terrain features' IR signatures throughout the exercise. Results show that (a) cooler mean temperatures occurred before 0600 hr, (b) warmest mean temperatures and higher variability occurred between 1201 and 1800 hr, (c) minimum variability was not unique to any

interval time of the day, and (d) the LWB feature data exhibited cooler mean temperatures and slightly less thermal variability than the SWB data throughout the day.

Results also show that (a) features' mean temperatures as well as air temperature varied considerably throughout the exercise, (b) LWB feature signatures followed closer to the air temperature than the SWB signatures, (c) cooler mean temperatures were exhibited before 21MAR for all features, (d) warmer mean temperatures were exhibited between 31MAR and 03APR and toward the end of the exercise (14APR), and (e) the coniferous tree, coniferous treeline, and deciduous treeline followed closer to the air temperature than the deciduous tree and the three ground-based features (sandy soil test track, grass, and snow). A point worthy of noting was that the deciduous (red oak) tree had no leaves; therefore, many of the signatures inside the polygon were due in part to a sandy-grass "background" material.



# **Bibliography**

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- SAS Institute, Inc. (1988). *SAS Procedures Guide*, Release 6.03 ed., Cary, NC.

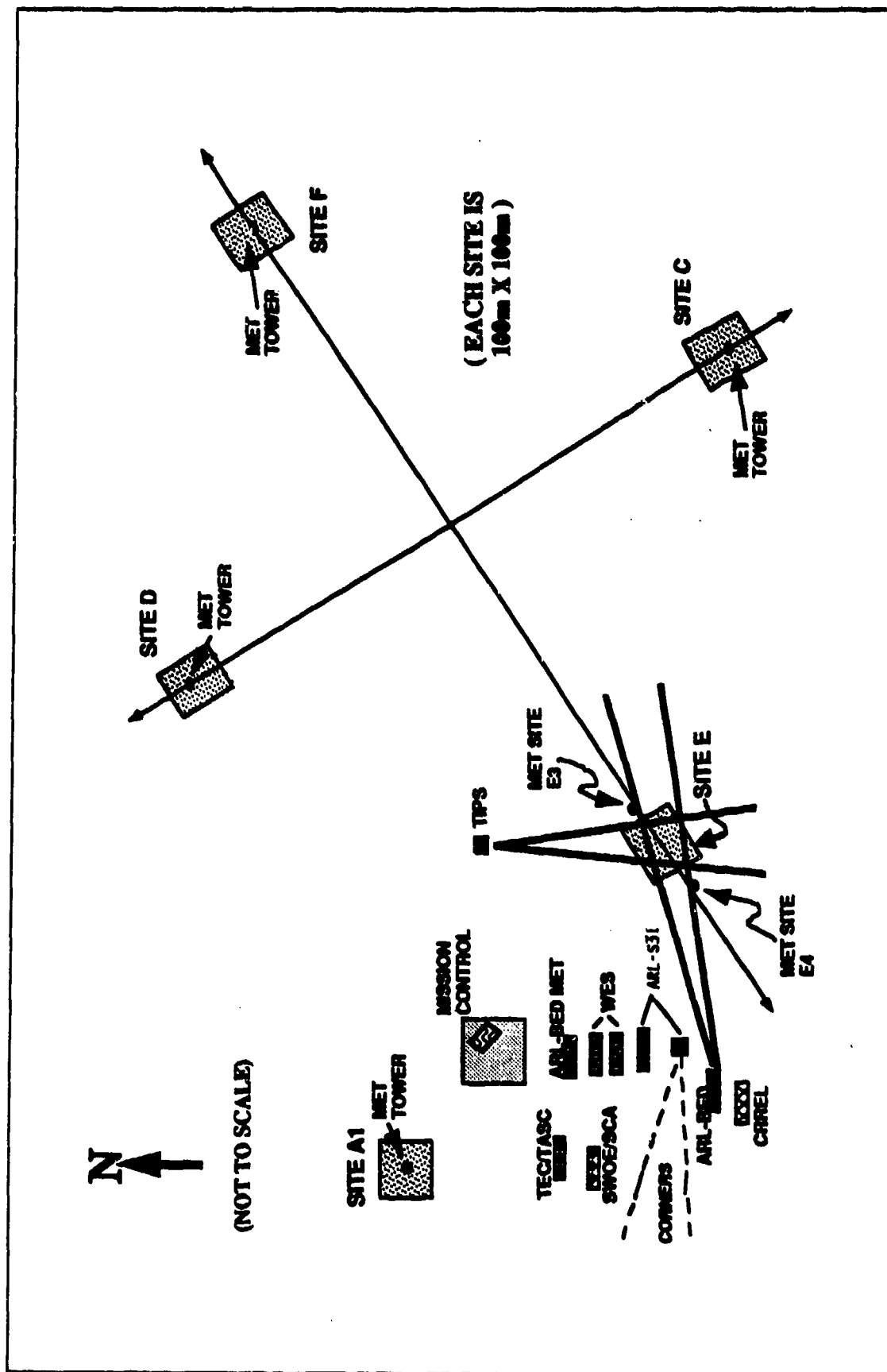


Figure 1. Grayling II site layout



Figure 2. Panoramic view from WES (trailer) showing Site E and surrounding area

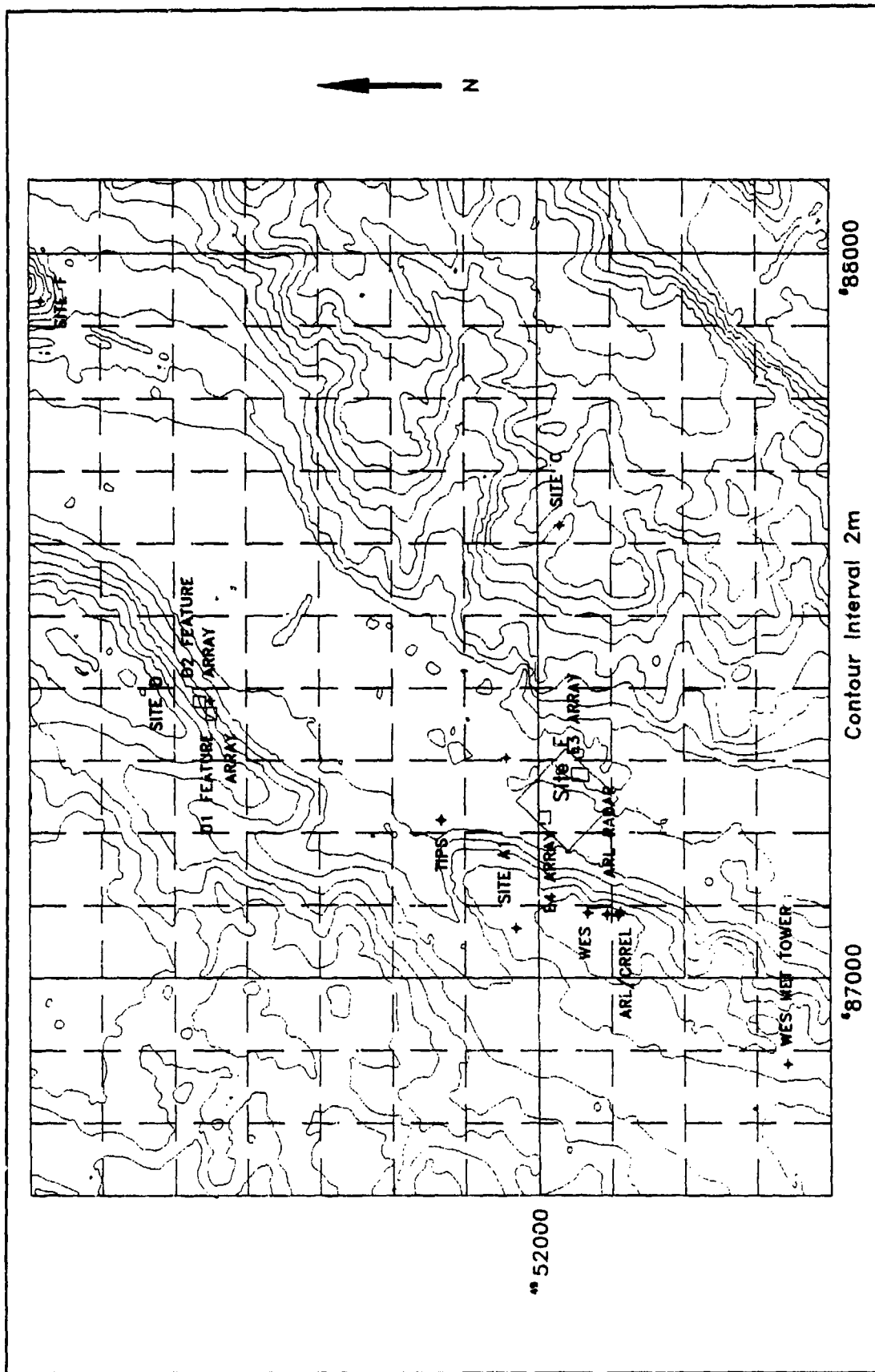


Figure 3. Contour map of Grayling II area with instrumentation sites

Image 1



Sandy Bare Soil  
(Vehicle Test Track)

Image 2



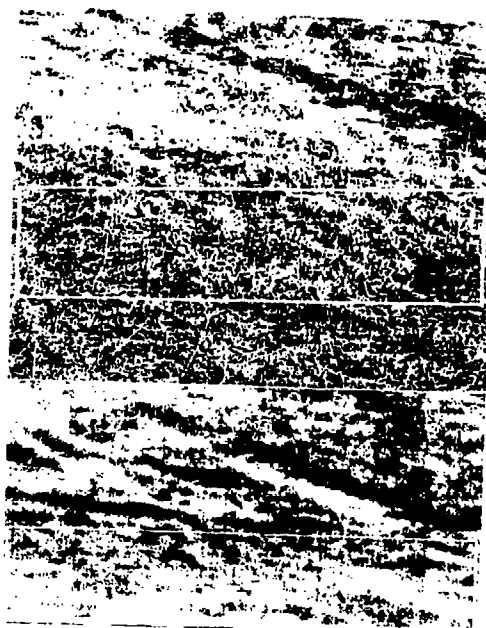
Grass  
(With Vehicle Track)

Image 3



Sandy Bare Soil  
(Vehicle Test Track)

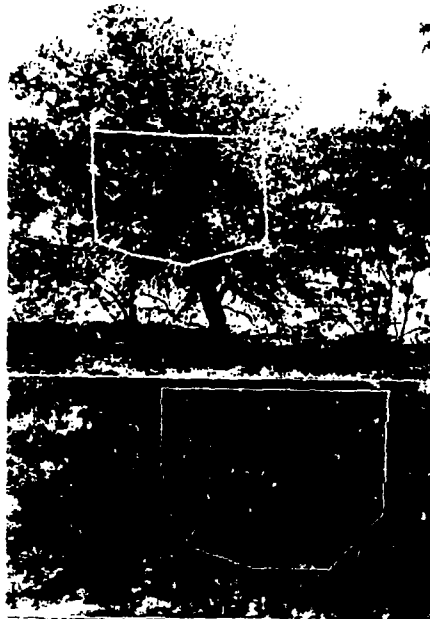
Image 4



Grass

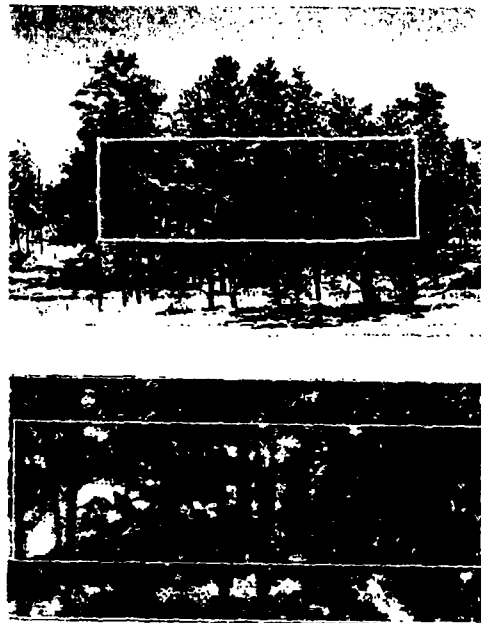
Figure 4. Color photographs with IR image (8 to 12  $\mu\text{m}$ ) of Grayling II terrain features  
(Sheet 1 of 3)

Image 5



Coniferous (Pine) Tree

Image 6



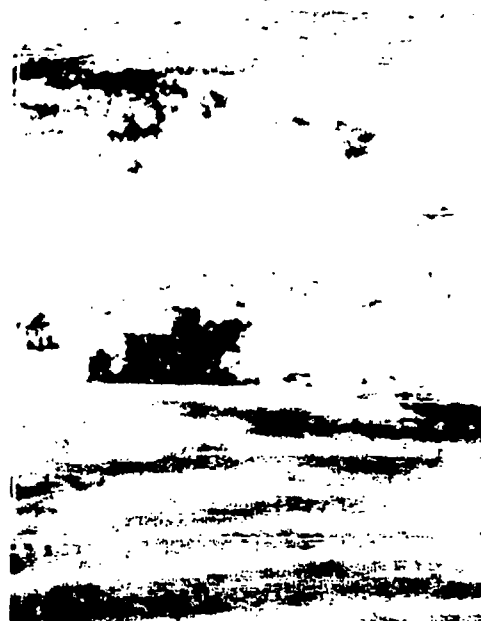
Coniferous (Pine) Treeline

Image 7



Deciduous (Red Oak) Tree

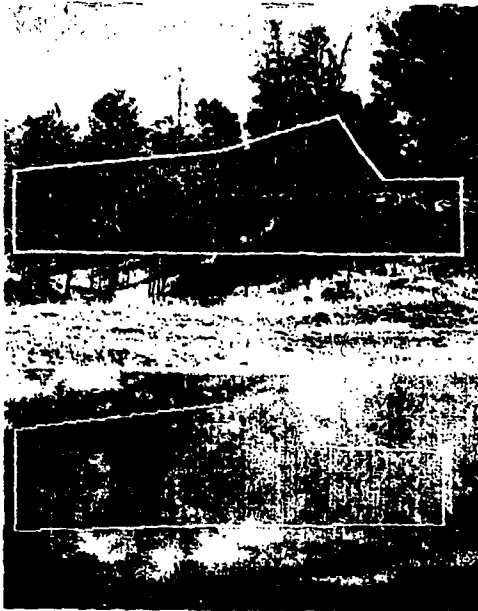
Image 8



Snow and/or Grass

Figure 4. (Sheet 2 of 3)

Image 9



Coniferous (Pine) Treeline

Image 10



Grass

Image 11



Mix of Coniferous  
and Deciduous Trees

Image 12

No Photo  
Available



Deciduous  
(Black Oak) Treeline

Figure 4. (Sheet 3 of 3)

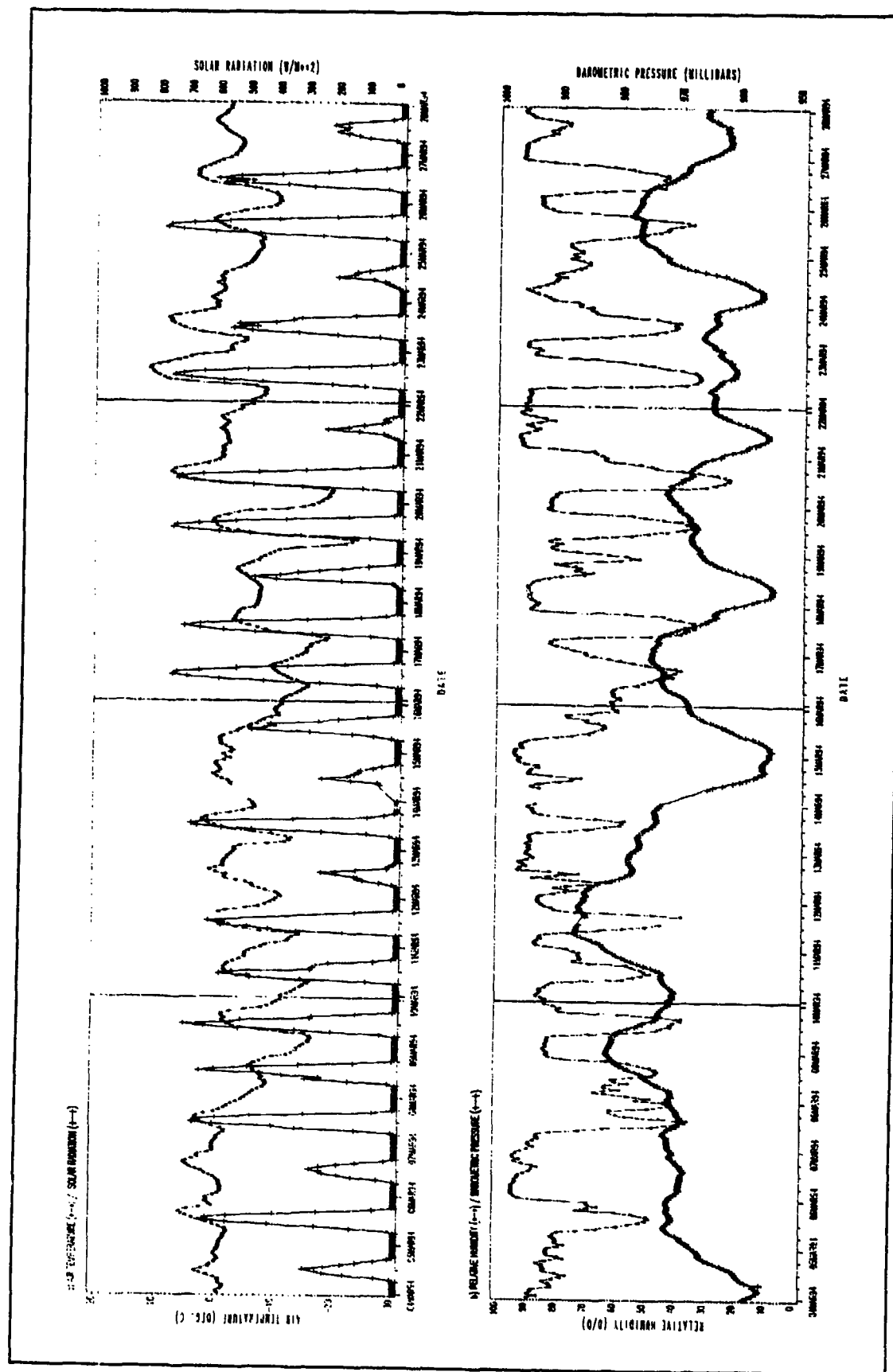


Figure 5. Meteorological conditions during Grayling II (Sheet 1 of 4)



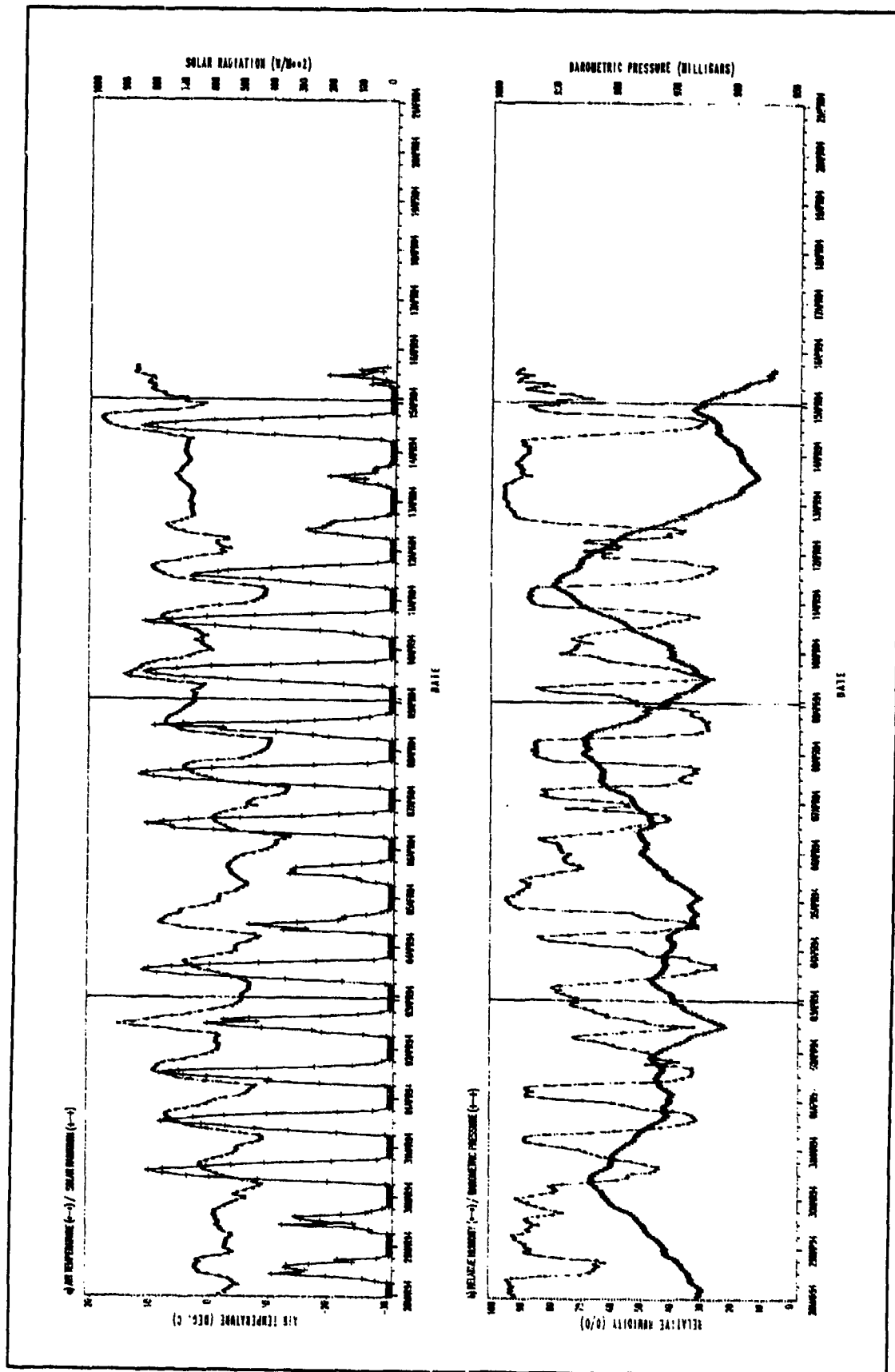


Figure 5. (Sheet 2 of 4)

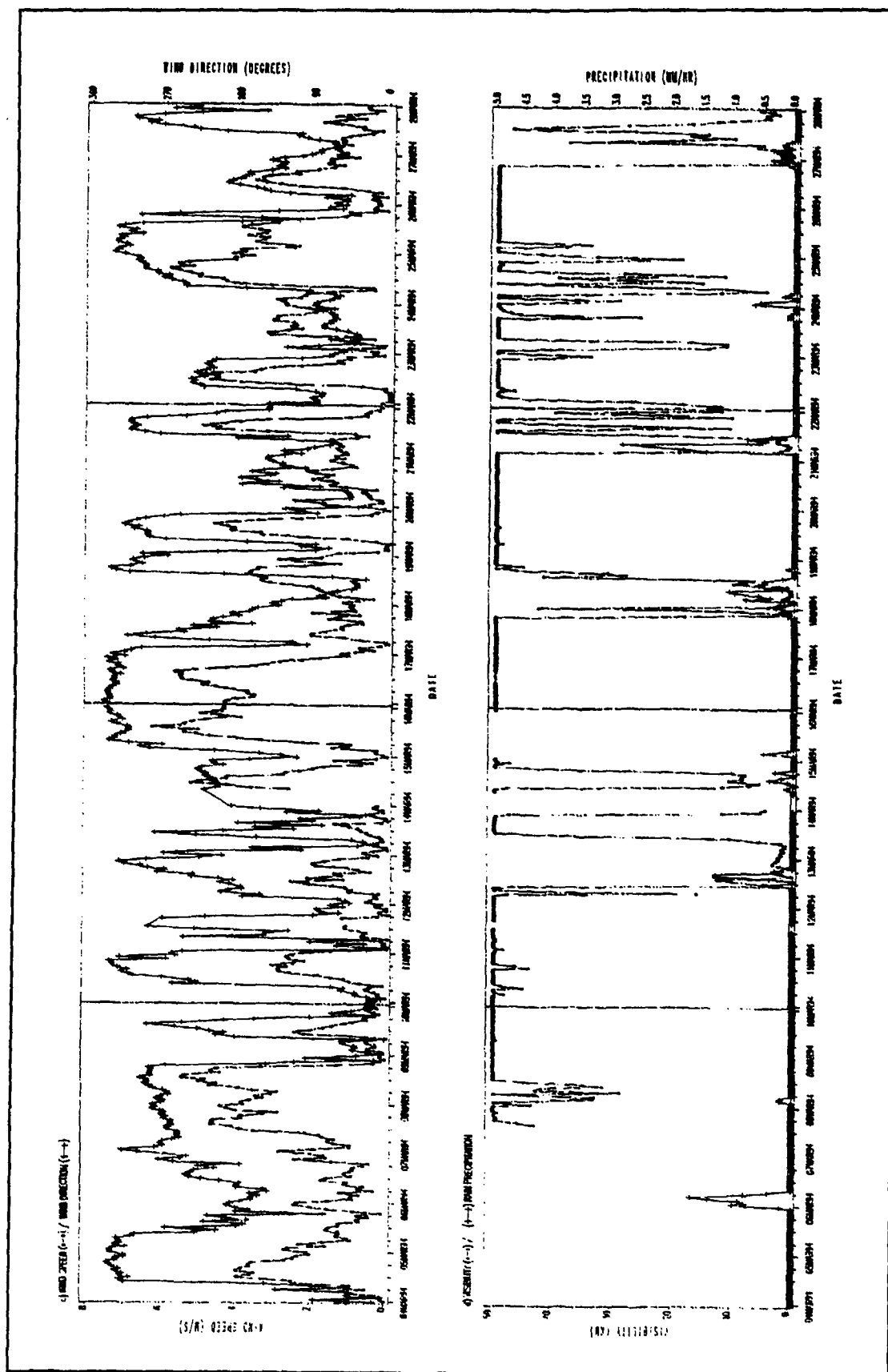


Figure 5. (Sheet 3 of 4)

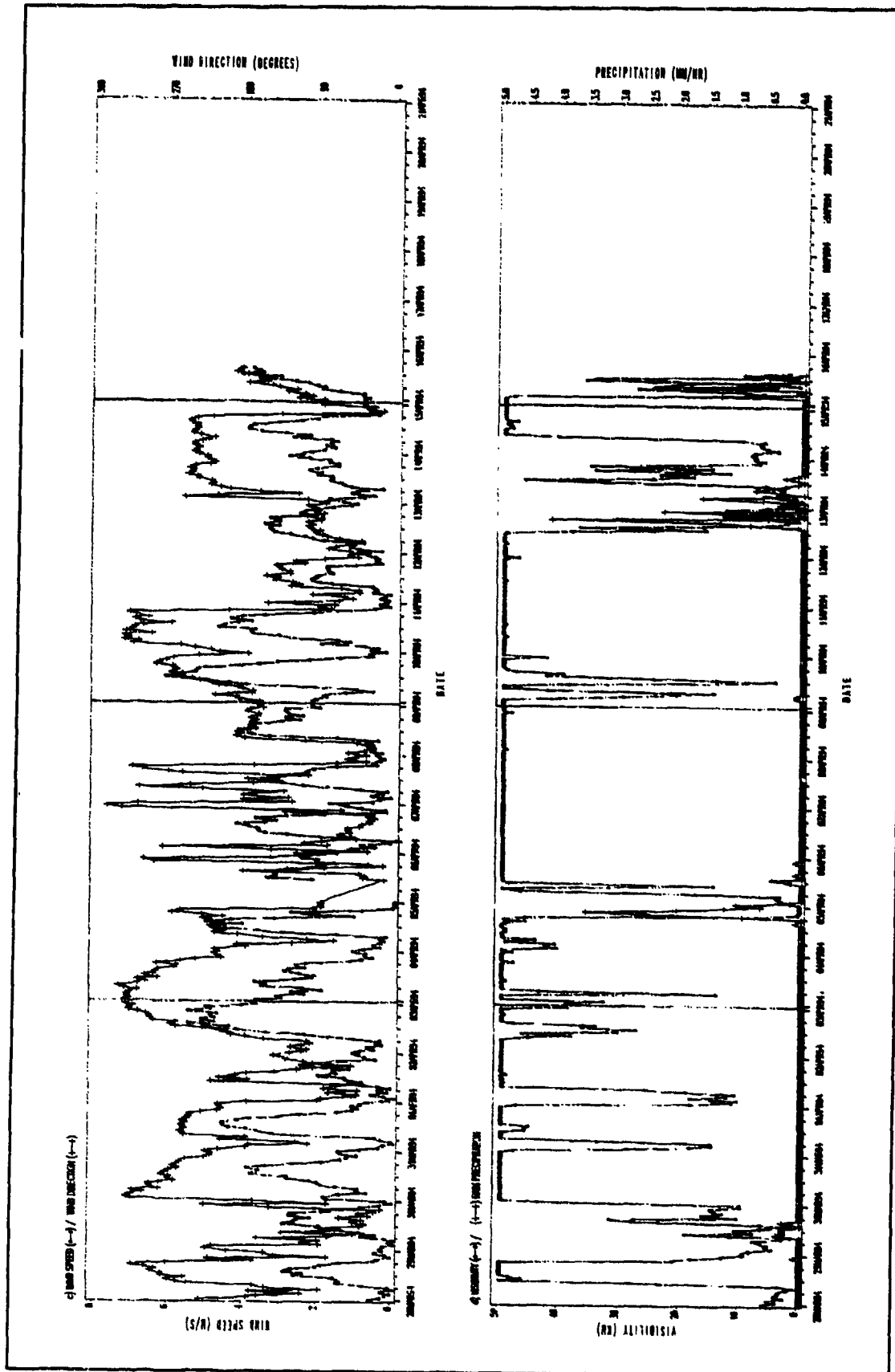


Figure 5. (Sheet 4 of 4)

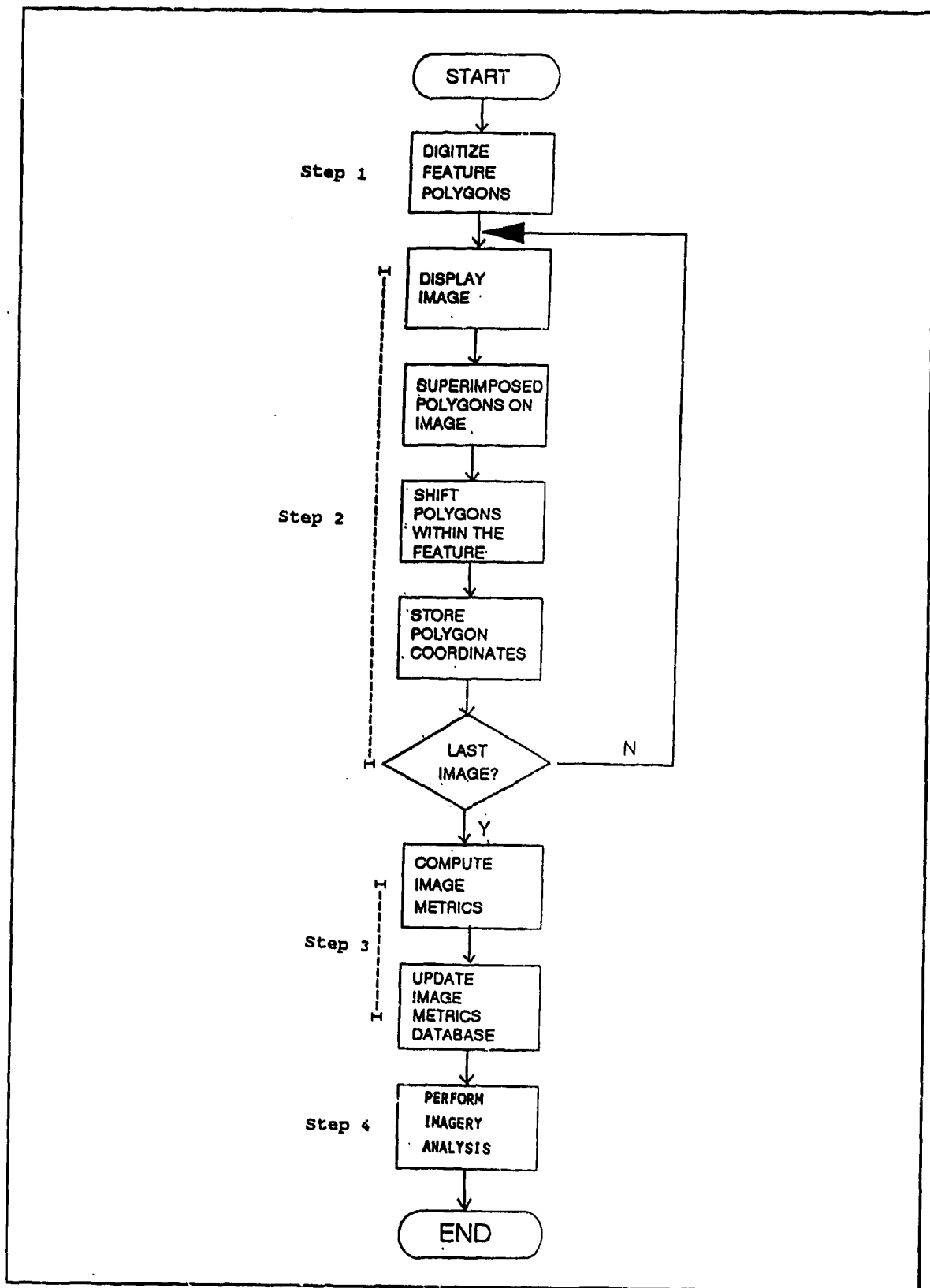


Figure 6. Grayling II IR Imagery processing procedure

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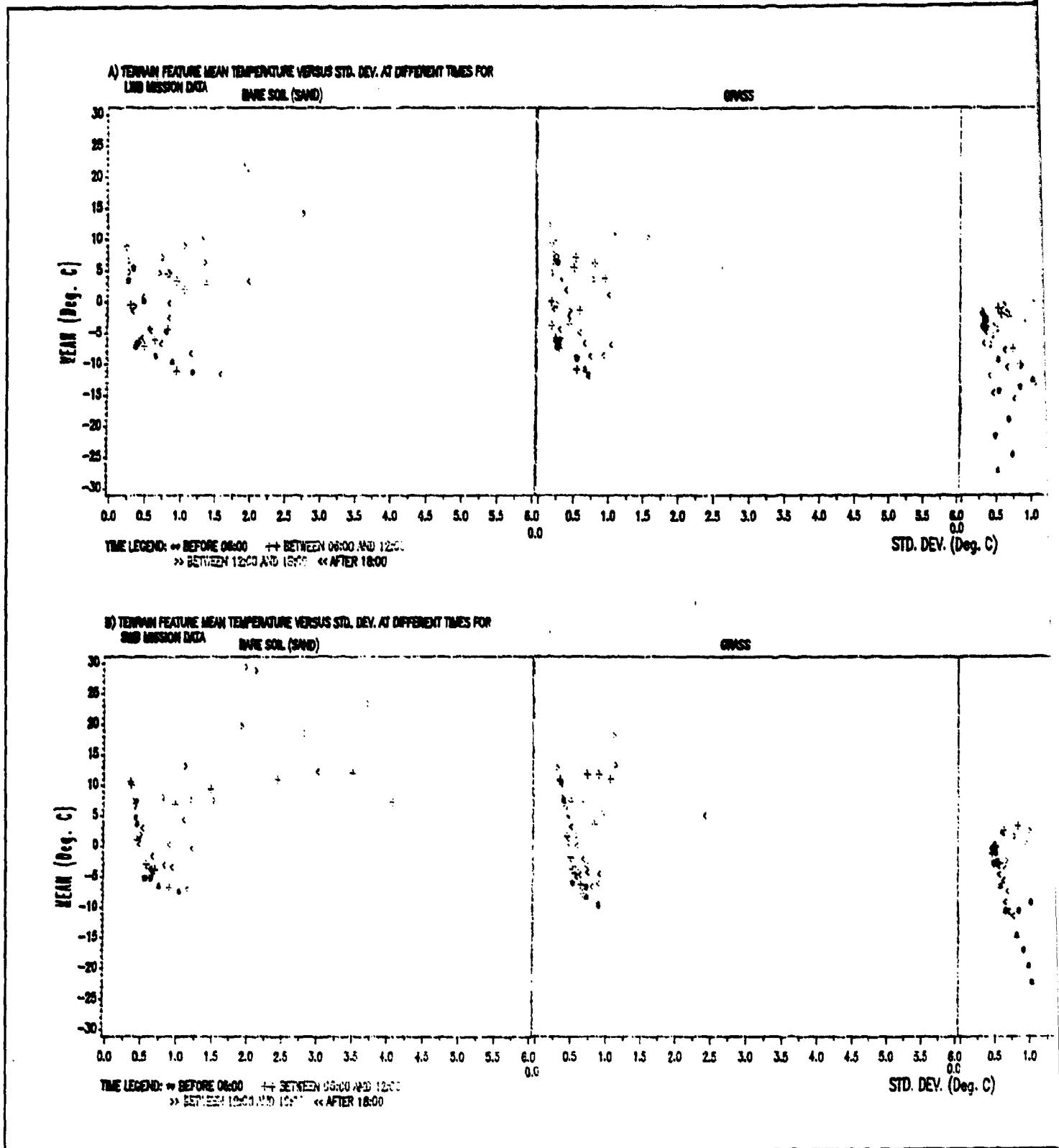
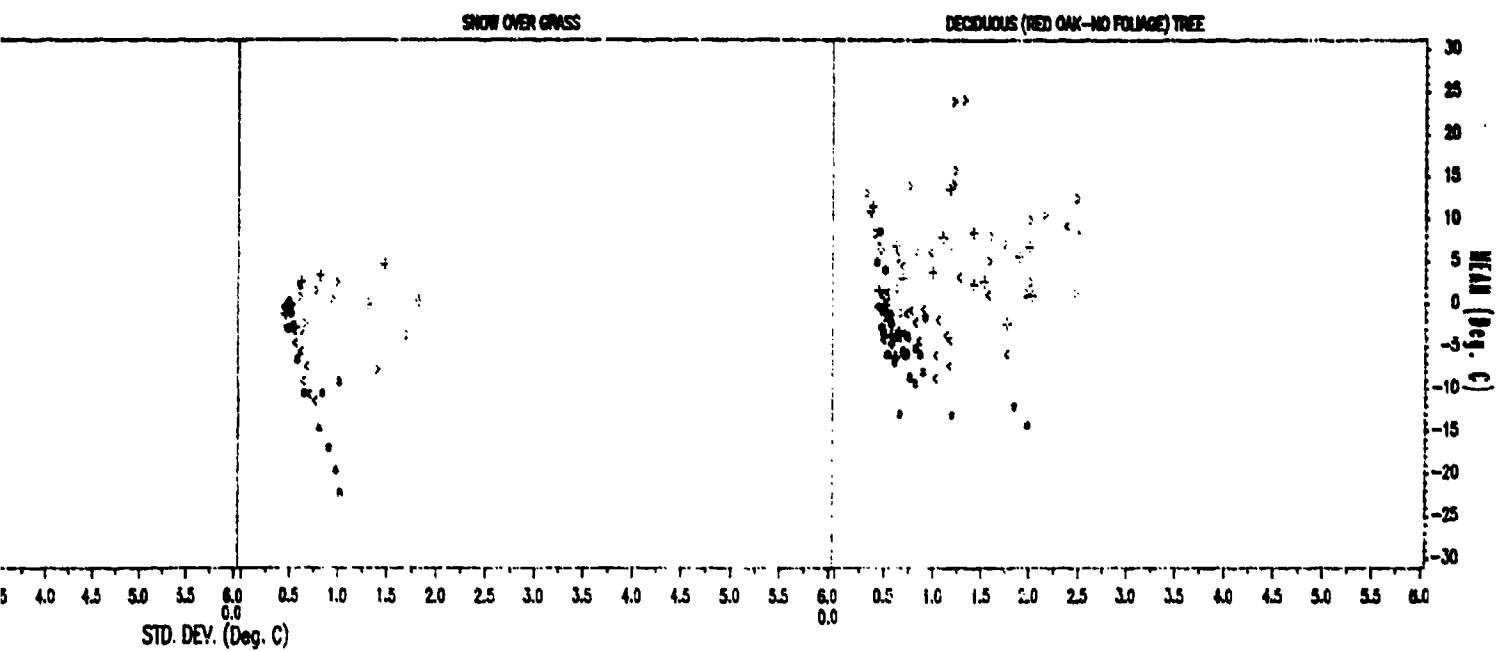
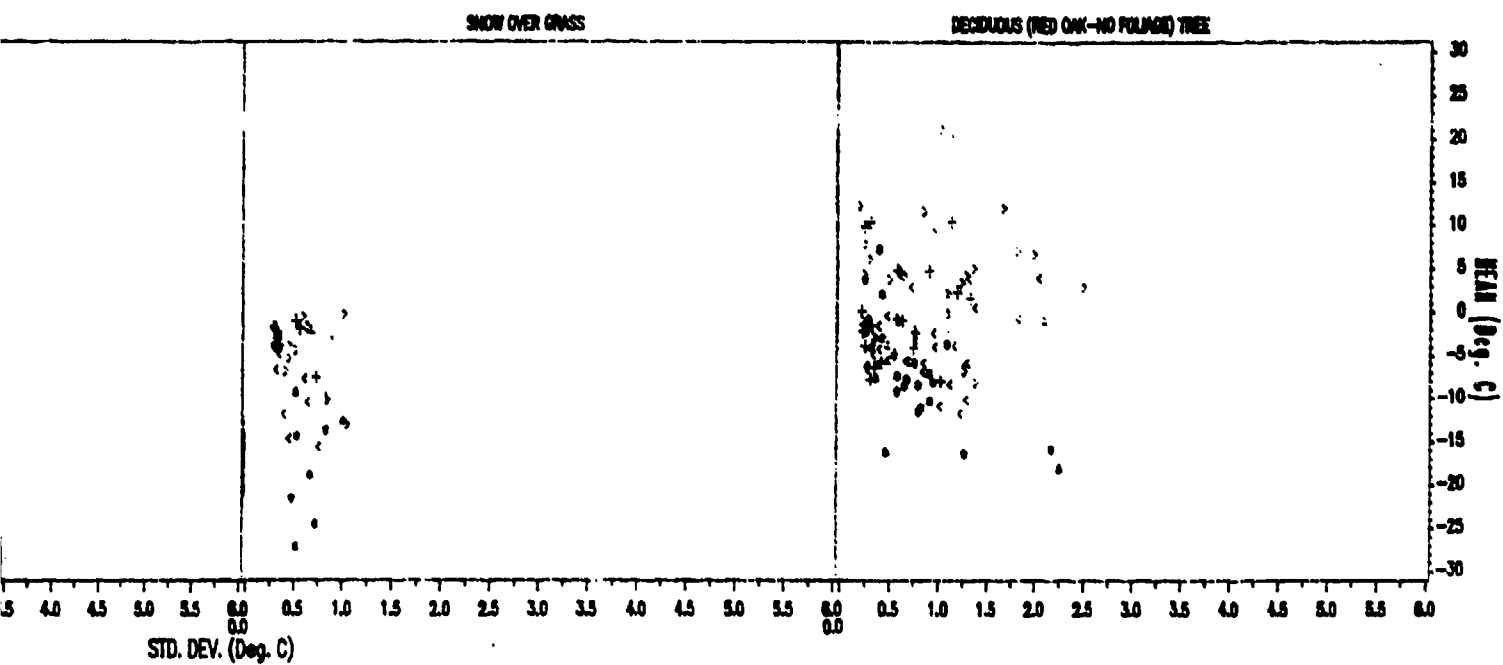


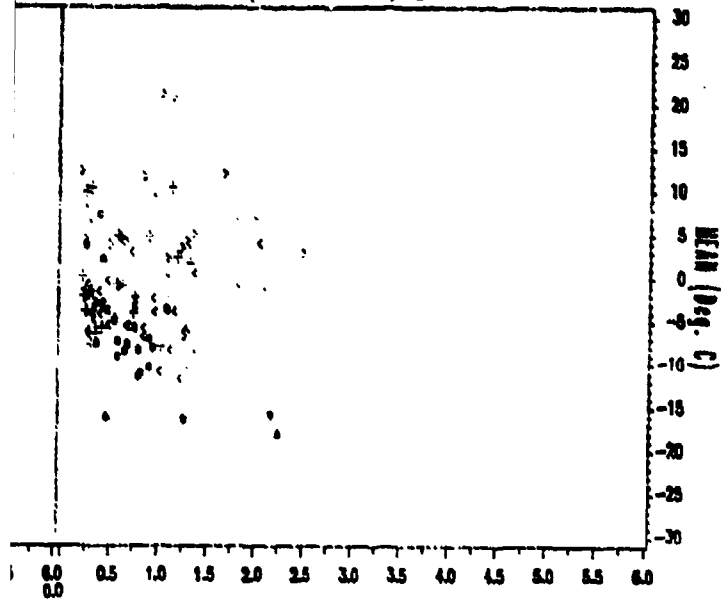
Figure 7. Terrain features' LWB and SWB IR signatures by time of day during Grayling II exercise (04MAR-15APR94) (Continue



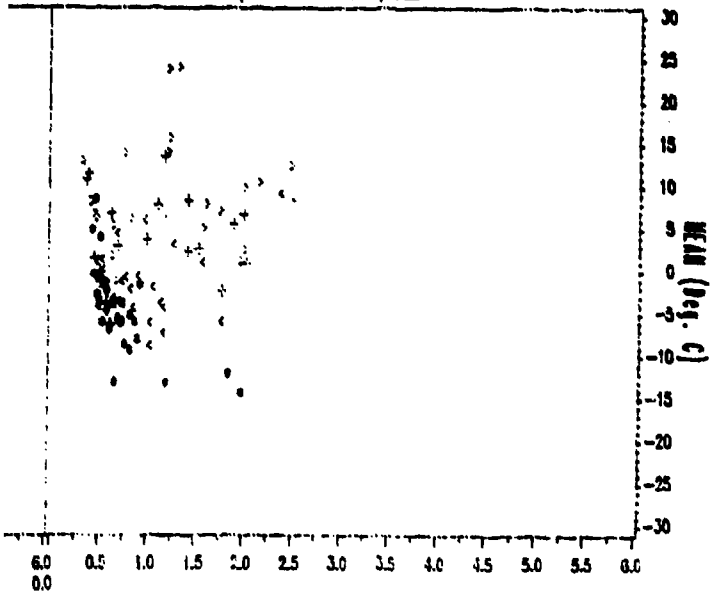
cise (04MAR-15APR94) (Continued)

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DECIDUOUS (RED OAK-NO FOLIAGE) TREE



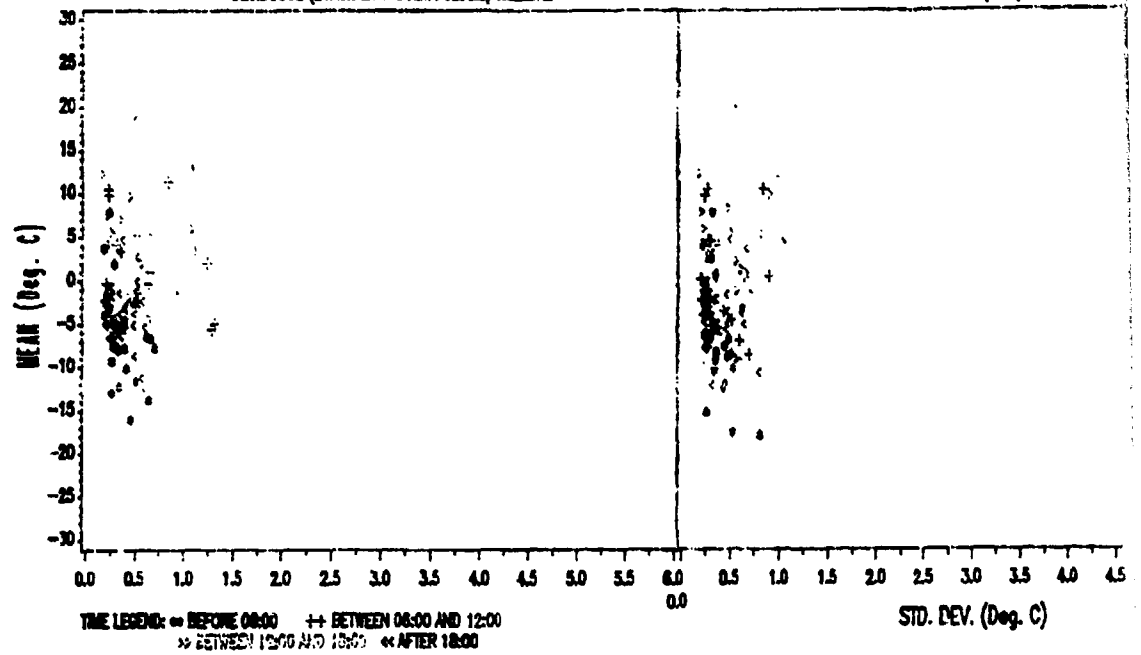
DECIDUOUS (RED OAK-NO FOLIAGE) TREE





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A) TERRAIN FEATURE MEAN TEMPERATURE VERSUS STD. DEV. AT DIFFERENT TIMES FOR  
LMD MISSION DATA



B) TERRAIN FEATURE MEAN TEMPERATURE VERSUS STD. DEV. AT DIFFERENT TIMES FOR  
SMD MISSION DATA

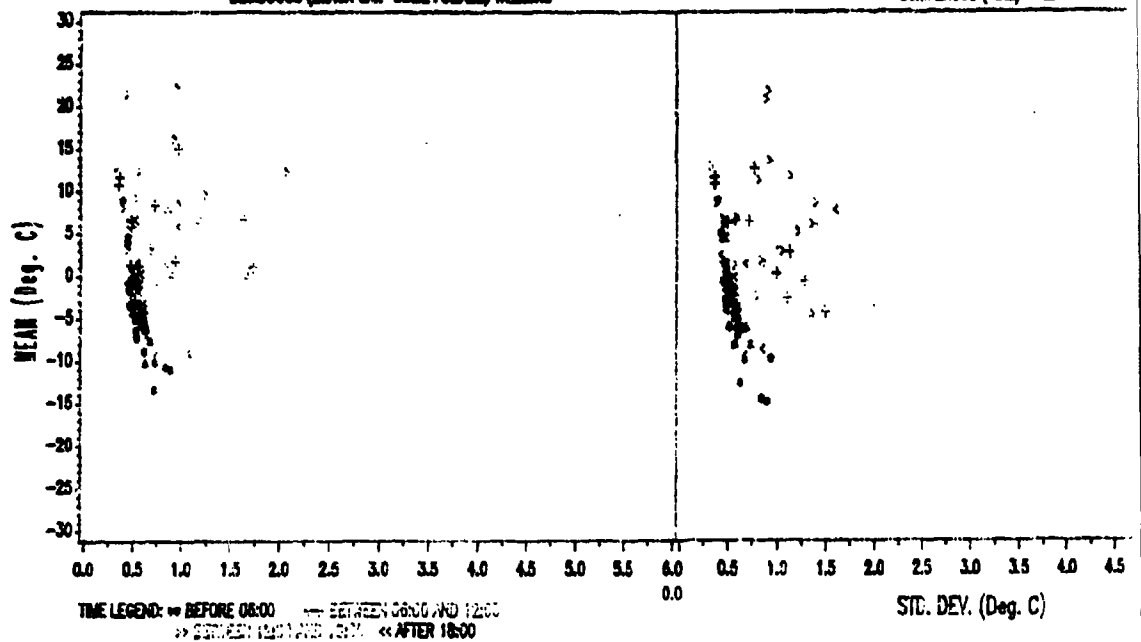
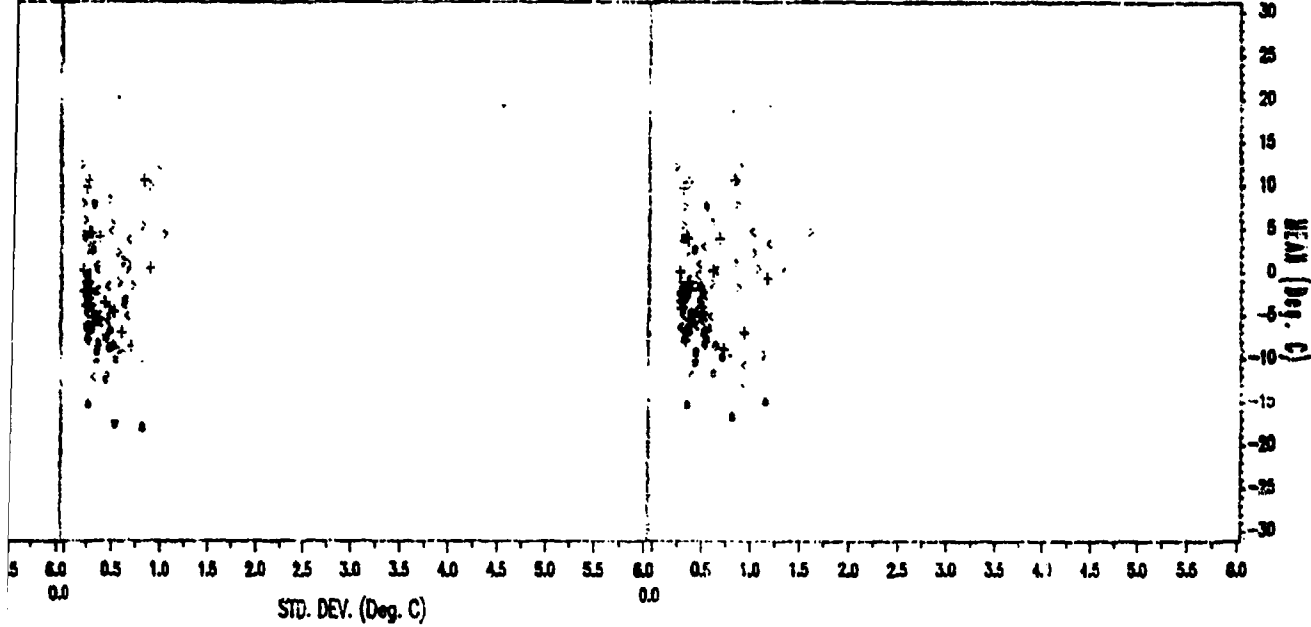


Figure 7. (Concluded)

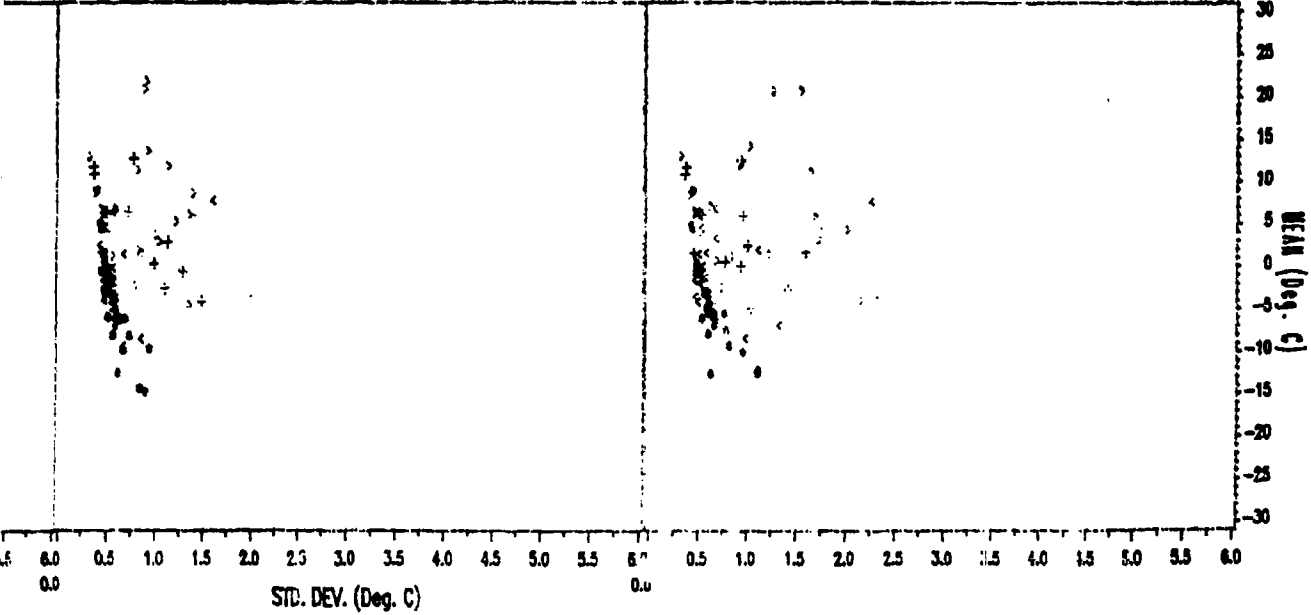
CONIFEROUS (PINE) TREE

CONIFEROUS (PINE) TREELINE



CONIFEROUS (PINE) TREE

CONIFEROUS (PINE) TREELINE



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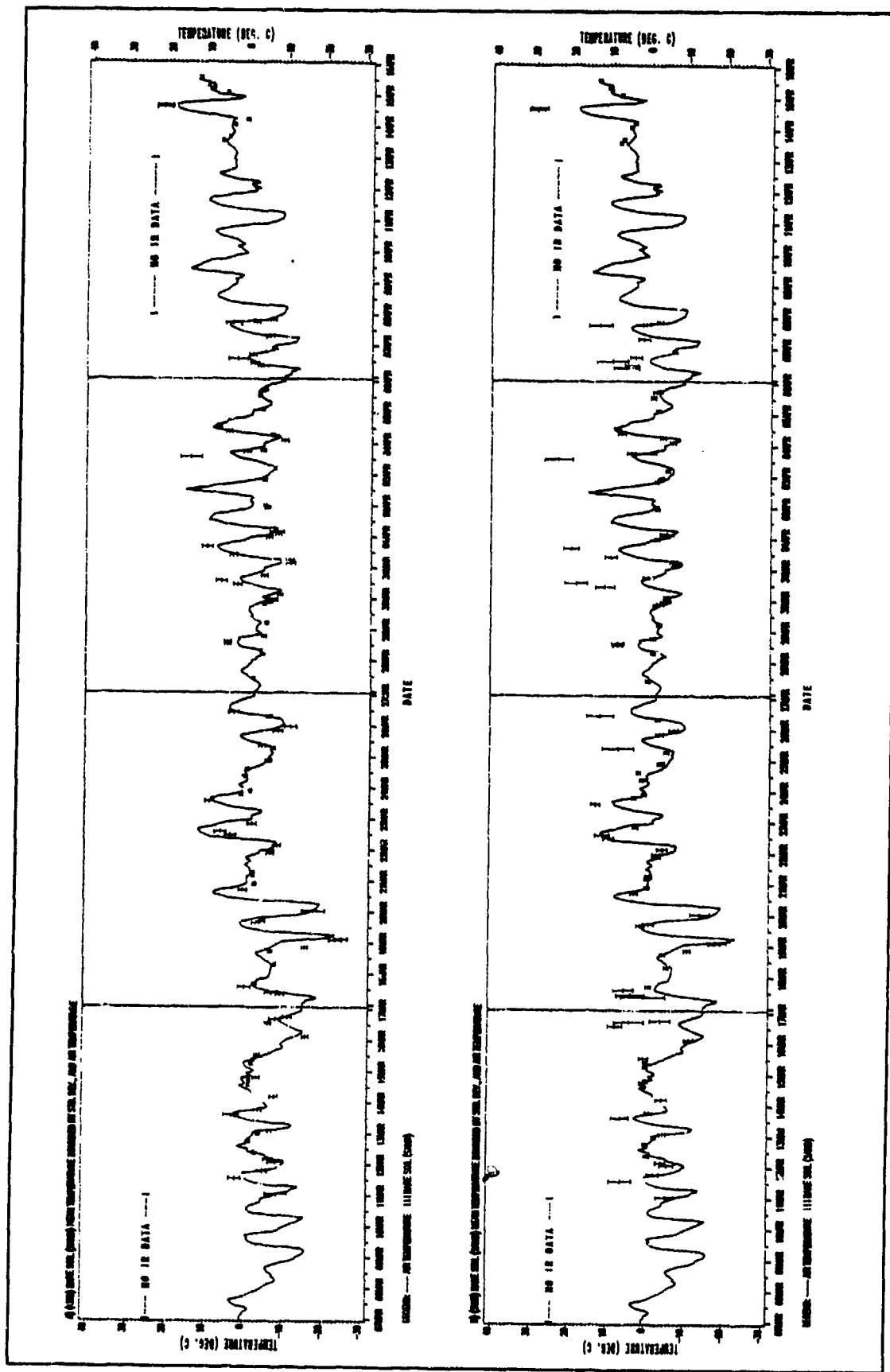


Figure 8. Bare soil LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Grayling II exercise

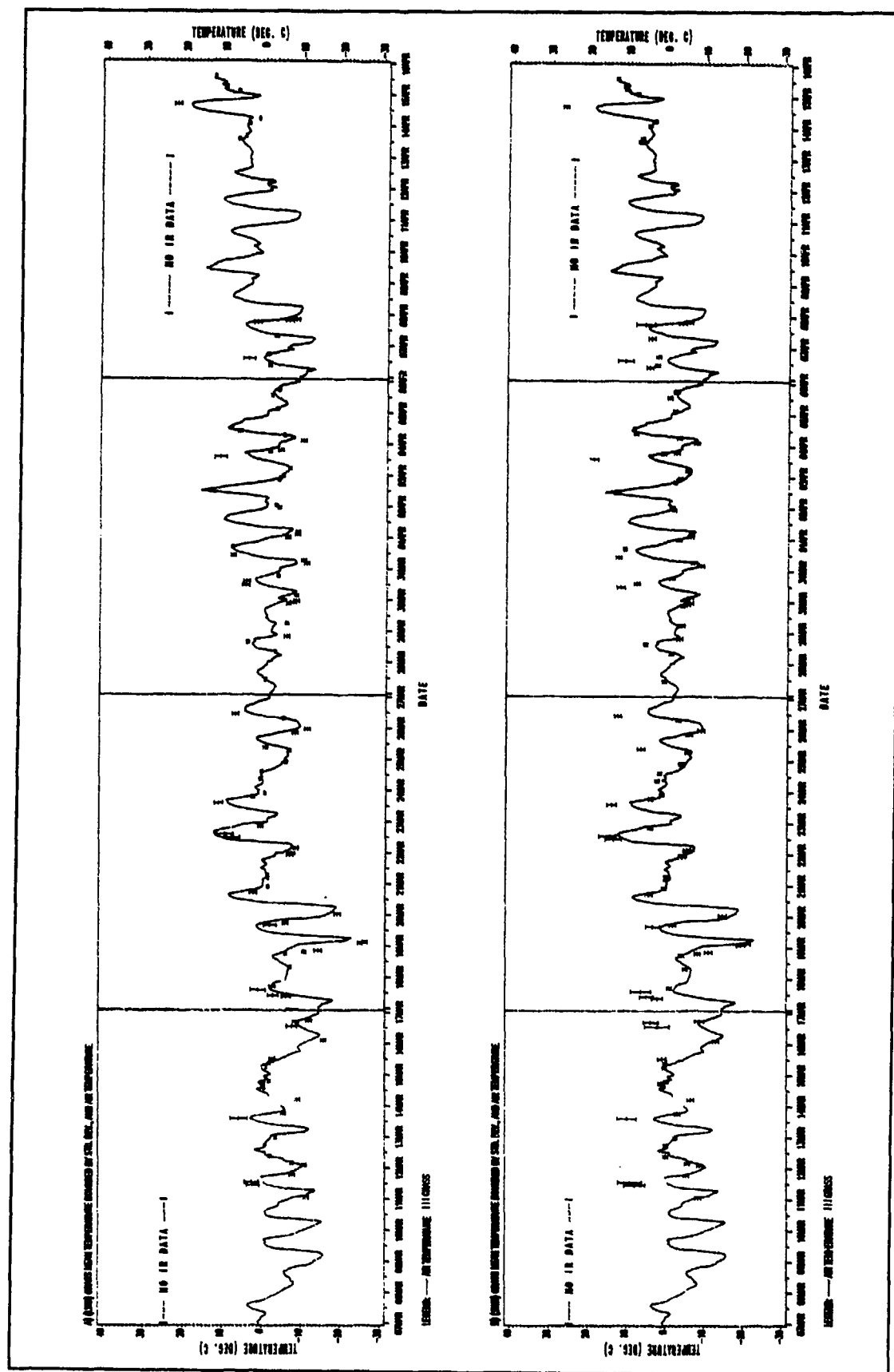


Figure 9. Grass LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Grayling II exercise

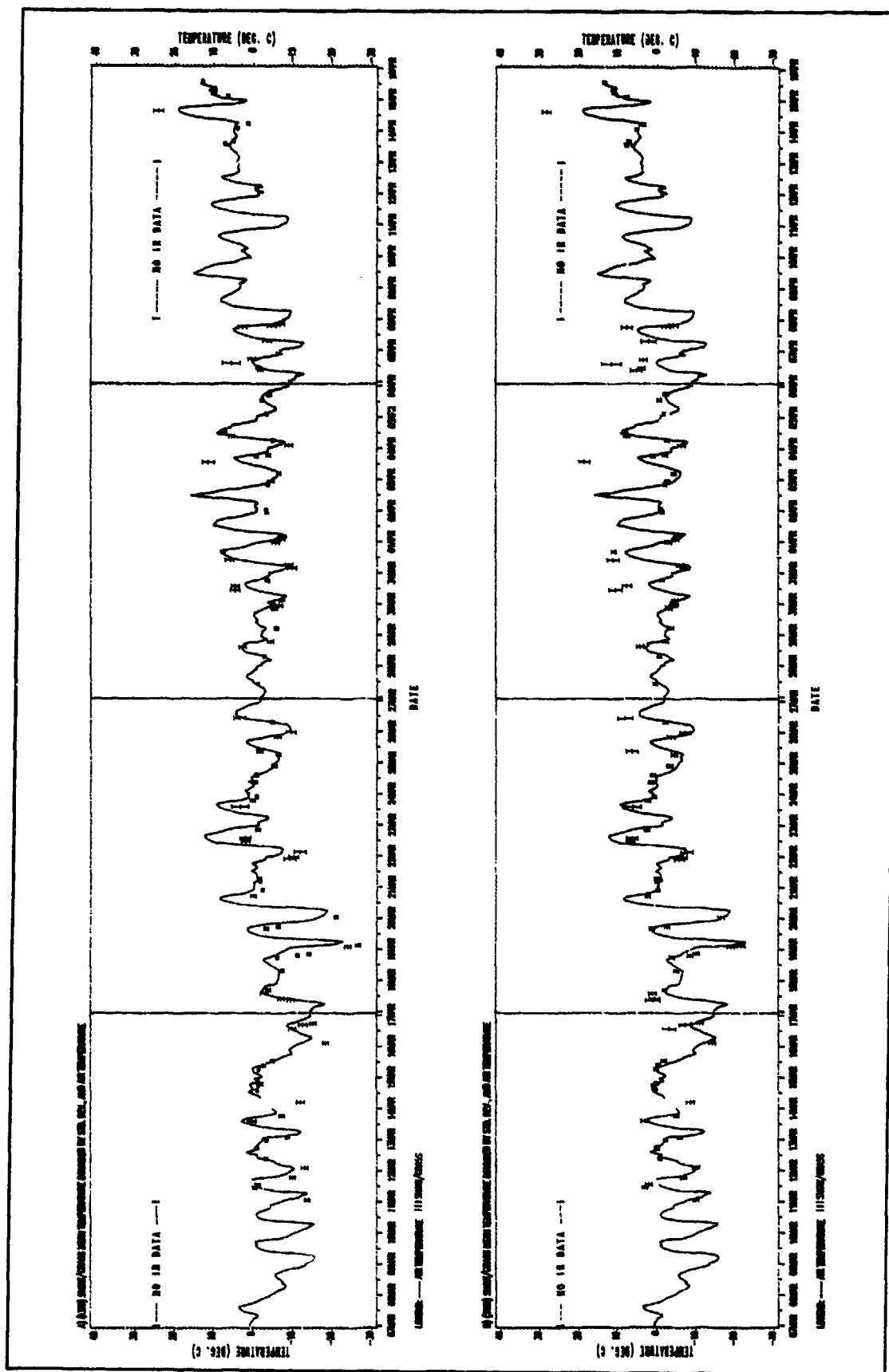


Figure 10. Snow and/or grass LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Grayling II exercise

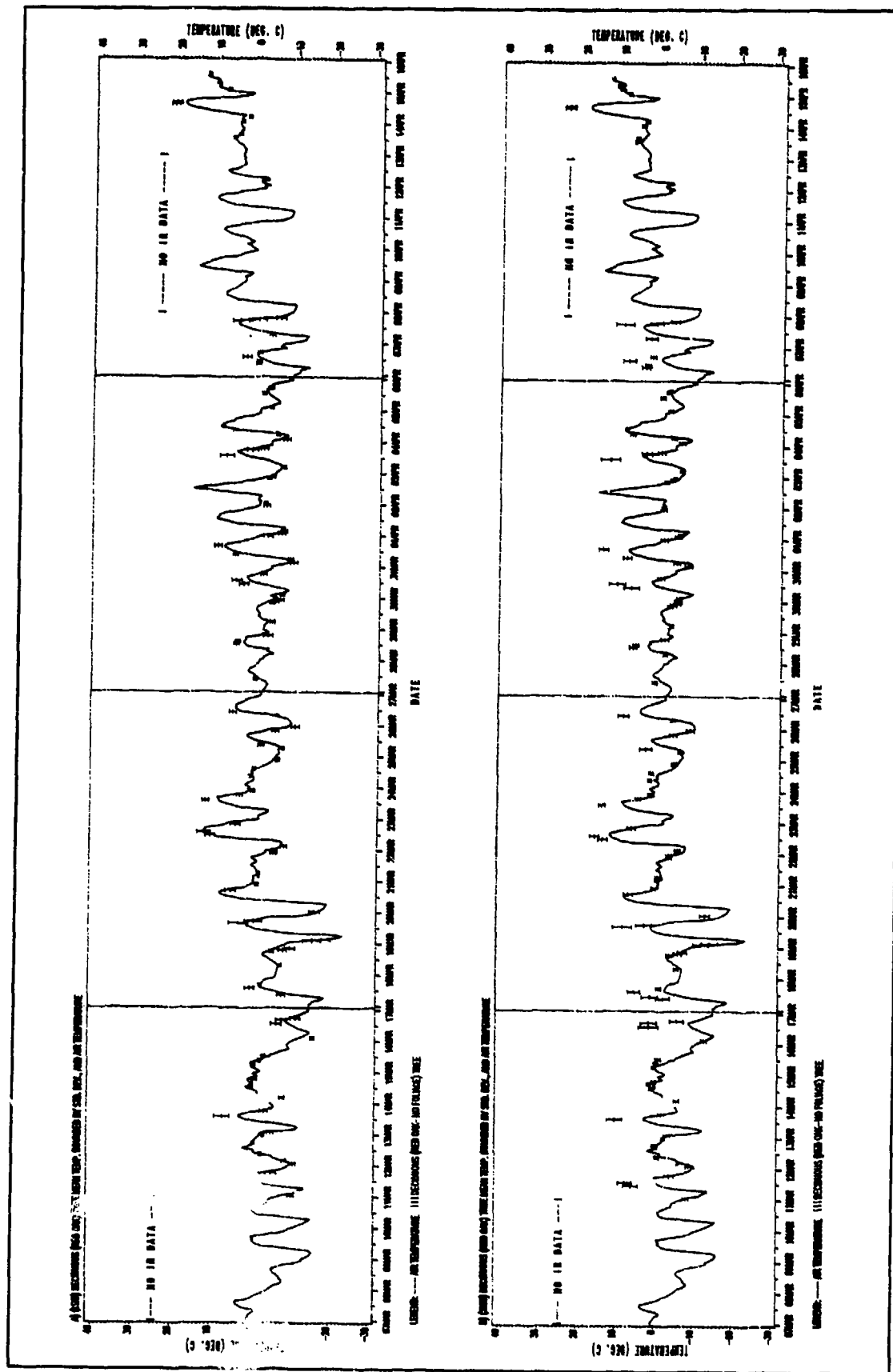


Figure 11. Deciduous (red oak) tree LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Grayling II exercise



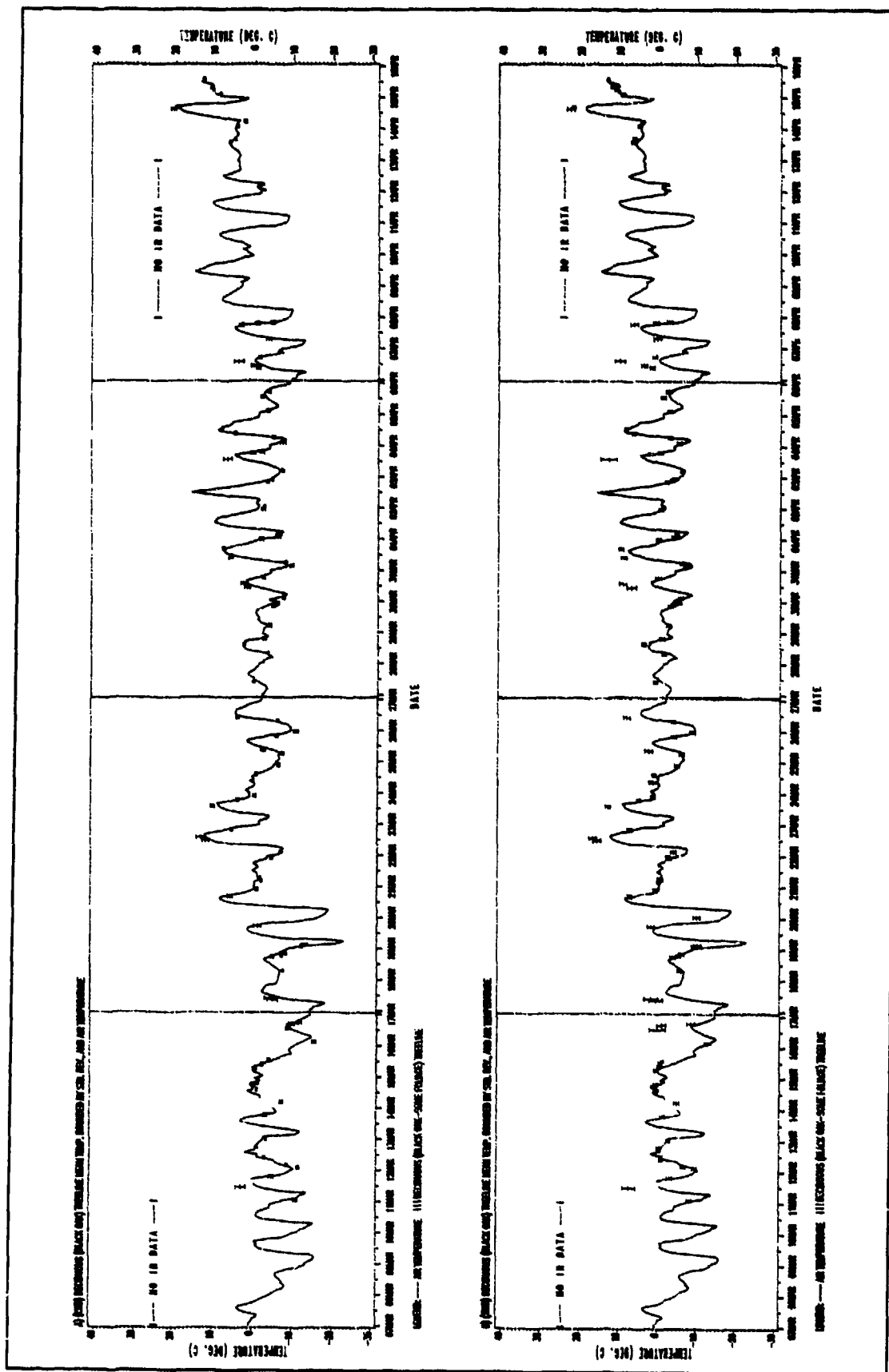


Figure 12. Deciduous (black oak) treeline LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Grayling II exercise

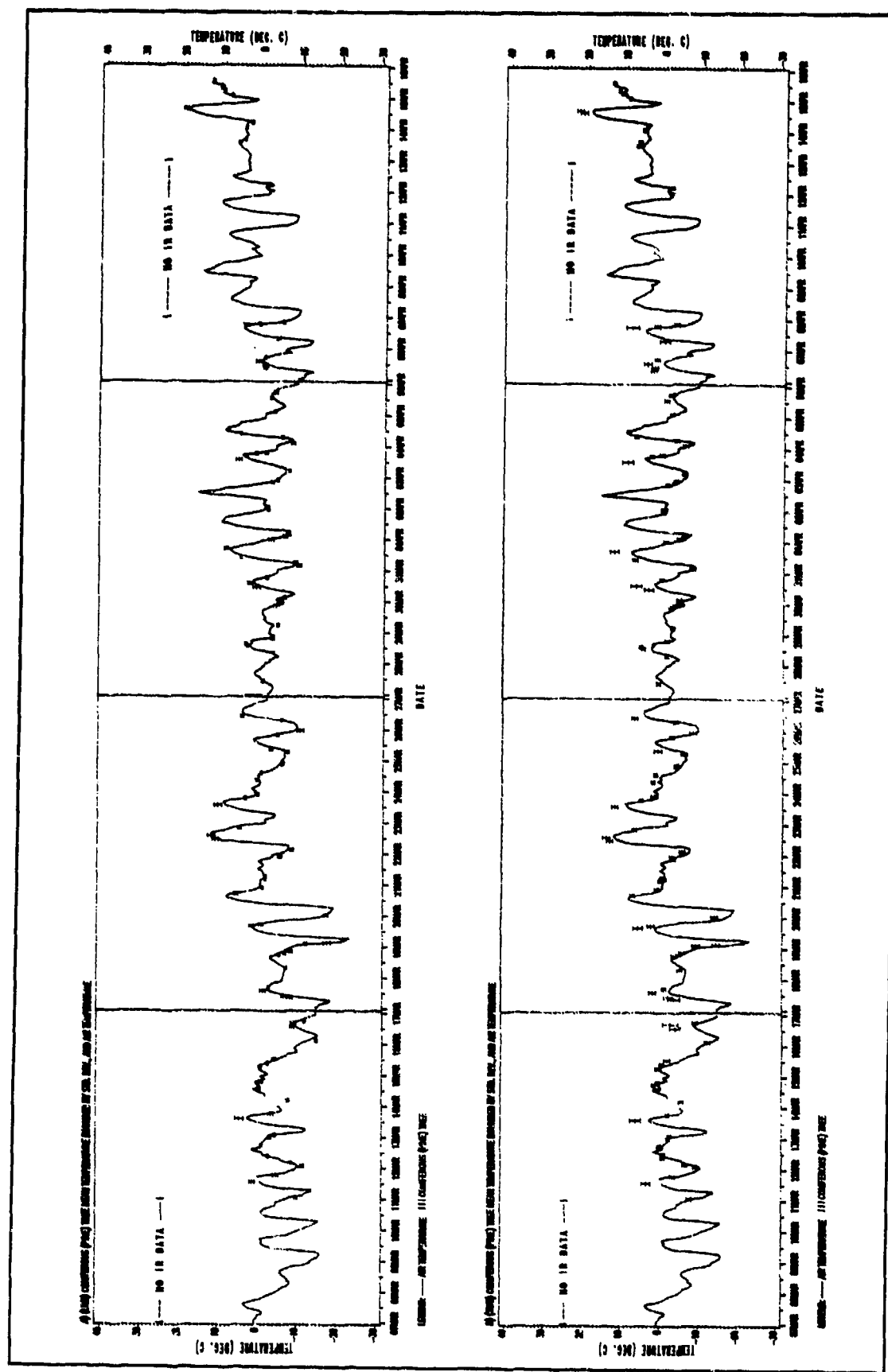


Figure 13. Coniferous (pine) tree LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Graying II exercise

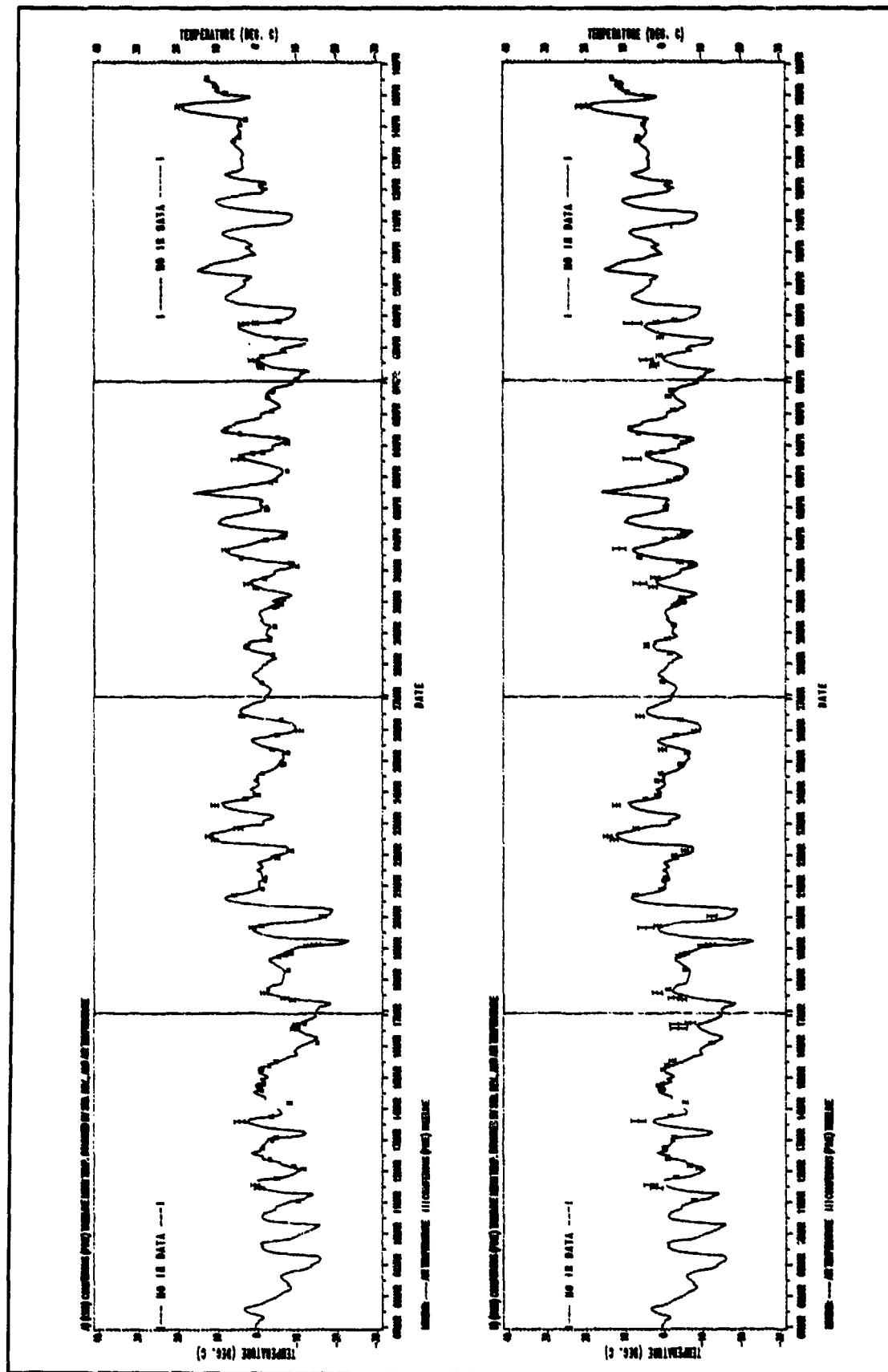


Figure 14. Coniferous (pine) treeline LWB and SWB IR signatures and air temperature (E3 station, 2 m above ground) during Graying II exercise

**Table 1**  
**IR Camera Specifications**

Specification	Wave Band	
	SWB	LWB
Model	Erika Thermovision 900 series - 900 SW	Erika Thermovision 900 series - 900 SW
Wavelength band	2 to 5.6 $\mu\text{m}$	8 to 12 $\mu\text{m}$
FOV lens	2.50h by 1.25v	2.50h by 1.25v
Screen resolution	272h by 136v	272h by 136v
Image resolution	12-bit (4096 levels)	12-bit (4096 levels)
Radiometric sensitivity	0.1 °C at 30 °C object temperature	0.08 °C at 30 °C object temperature
Radiometric accuracy	$\pm 1\%$ or $\pm 1$ °C	$\pm 1\%$ or $\pm 1$ °C
Radiometric repeatability	$\pm 0.5\%$ or $\pm 0.5$ °C	$\pm 0.5\%$ or $\pm 0.5$ °C

**Table 2**  
**SWOE 1-Hr Missions Schedule**

Month	March 1994																											
Day	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	
Date	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Hour	0	25	49	73	97	121	145	169	193	217	241	265	289	313	337	361	385	409	433	457	481	505	529	553	577	601	625	
midnight										37																		
1							23	29									65											
2		3							33	34		45				61												
3													49			62		73							83		105	
4									34								66	69							84			
5						21					41															101		
6												46						70				85		85				
7	5				17										57								89					
8						22				38																87		
9						23						47		53								61	66					
10			9		24									54									90	96				
11			10				26	30											74								106	
12							27																					
13			11	13			28	31				48	59													98		
14					18					38	42			55				75	77	82							107	
15	1			14																					99			
16		7	12													63								91				
17	2	8											51	56		84	87											
18	3			15	19				36	40	43		52		58												108	
19								32			44									78					100			
20		4		16											60				78	79		87				102		
21					20																					103		
22																	68	71		80	84							
23																		72				88	92			104		
Hour	24	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504	528	552	576	600	624	648	
Day #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Julian Day	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	

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												April 1994													
o	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Day
2	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Date
3	457	481	505	529	553	577	601	625	649	673	697	721	745	769	793	817	841	865	889	913	937	961	985	1009	Hour
										113															midnight
											117							145							1
										114			123				141						165	189	2
					83				105					129			142			153					3
					84				109	115								148	149						4
						101							121									161	186		5
				85	86					110			126						150					170	6
				89												137						182			7
						87																		171	8
		81	86										127		133										9
				90	96				111						134										10
								106												154					11
																									12
						88							128	130								163			13
	77	82						107					122		135					135	137			172	14
						89																	167		15
				91					112								143					164	166		16
														131	136		144	147							17
								108					123	132		138									18
	76					100							124			139					156				19
	79		87				102					118				140				154	159				20
		83					103																		21
	80	84									119							146	151		160				22
			88	82				104			116	120							152						23
480	504	528	552	576	600	624	648	672	696	720	744	768	792	816	840	864	888	912	936	960	984	1008	1032	Hour	
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	Day #	
82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	Julian Day	

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**Table 3**  
**Twelve Measurement Times for All 172 SWOE 1-Hr Missions (Sheet 1 of 5)**

Calendar day month 1994	Julian day	Grayling II Mission number	Mission Start time 24 Hour EST	validation frame first minute from Mission start	5 second images set 1	5 second images set 2	5 second images set 3	5 second images set 4	5 second images set 5	5 second images set 6	5 second images set 7	5 second images set 8	5 second images set 9	5 second images set 10	5 second images set 11	5 second images set 12
4-Mar	63	1	15	41	4	7	11	14	22	31	33	34	41	44	45	46
		2	17	43	4	6	17	21	22	35	40	41	43	44	45	47
		3	18	42	1	6	8	9	13	28	34	42	48	54	55	58
		4	20	49	17	28	29	30	34	35	39	43	48	48	54	55
5-Mar	64	5	2	38	1	5	26	37	38	40	42	49	50	54	55	58
		6	7	43	5	7	9	11	22	32	35	38	41	43	48	50
		7	16	32	18	28	28	29	30	31	32	34	38	48	48	55
		8	18	15	4	7	8	14	15	23	28	34	38	44	48	50
6-Mar	65	9	10	36	8	10	14	30	31	34	38	37	44	53	54	57
		10	11	42	7	8	12	21	22	28	34	35	42	46	47	57
		11	13	5	5	6	7	10	12	13	25	32	36	48	52	54
		12	18	12	2	9	12	19	20	21	28	30	41	51	52	53
7-Mar	66	13	13	41	7	9	10	12	17	24	27	39	40	41	51	58
		14	15	58	13	14	15	19	33	34	38	37	38	47	48	58
		15	18	52	2	8	18	28	27	39	41	45	46	51	52	58
		16	20	50	4	10	24	29	37	38	39	40	43	46	50	60
8-Mar	67	17	7	59	3	6	12	13	18	21	22	25	28	48	55	59
		18	14	42	22	24	30	33	33	40	42	49	50	51	52	54
		19	18	18	1	4	8	12	16	18	31	40	47	53	55	58
		20	21	31	4	28	30	31	36	38	39	45	46	48	52	56
9-Mar	68	21	5	5	5	19	21	26	34	35	36	38	46	49	59	60
		22	8	25	10	19	20	25	29	30	32	37	41	42	49	53
		23	9	25	1	2	9	14	19	25	28	30	40	42	46	52
		24	10	13	11	12	13	14	18	19	26	40	41	51	52	53
10-Mar	69	25	1	3	3	4	6	10	14	17	25	28	31	32	55	57
		26	11	57	6	14	22	26	31	41	42	44	51	52	57	59
		27	12	54	1	4	5	23	26	36	38	41	44	48	54	57
		28	13	32	5	6	7	16	25	32	40	48	54	57	58	59
11-Mar	70	29	1	39	2	3	10	11	13	23	28	32	33	38	38	48
		30	11	20	1	7	14	16	18	20	23	37	43	46	48	52
		31	13	28	17	18	20	25	28	33	35	38	46	53	54	60
		32	19	9	4	5	9	17	18	19	31	33	34	35	50	55
12-Mar	71	33	2	14	1	14	18	19	20	21	35	41	42	49	53	54
		34	4	14	1	3	4	14	15	22	23	24	30	31	41	58
		35	9	44	5	8	20	21	22	33	41	44	48	48	53	55
		36	18	29	5	6	10	12	16	27	29	36	38	47	54	55
13-Mar	72	37	0	14	5	14	25	26	33	39	41	42	46	51	52	53
		38	2	26	5	7	11	14	25	28	31	39	42	43	49	55
		39	14	43	7	9	22	25	28	34	35	43	46	48	49	53
		40	18	50	5	17	19	20	21	26	27	40	42	43	47	50



Table 3 (Sheet 2 of 5)

Calendar day month 1994	Julian day	Graying! Mission number	Mission Start Time 24 Hour	validation time first on minute from Mission start	5 second images set 1	5 second images set 2	5 second images set 3	5 second images set 4	5 second images set 5	5 second images set 6	5 second images set 7	5 second images set 8	5 second images set 9	5 second images set 10	5 second images set 11	5 second images set 12
14-Mar	73	41	5	9	6	9	13	16	17	18	25	33	34	42	44	60
		42	14	34	4	10	14	16	17	19	27	30	34	48	53	59
		43	18	1	1	3	4	5	9	13	21	25	38	43	48	53
		44	19	50	2	6	7	11	19	23	30	37	40	42	43	50
15-Mar	74	45	2	36	6	7	8	9	13	14	25	31	38	55	57	59
		46	6	37	3	14	20	21	22	37	38	42	48	50	53	58
		47	9	48	3	14	17	28	31	32	34	35	38	39	48	54
		48	13	10	1	4	9	10	13	15	16	28	29	30	40	60
16-Mar	75	49	3	14	12	13	14	23	25	29	31	41	44	45	49	57
		50	13	42	2	7	13	27	28	37	38	40	41	42	52	58
		51	17	2	2	16	19	20	26	32	33	36	38	41	42	45
		52	18	7	1	5	7	17	21	22	23	24	38	50	52	59
17-Mar	76	53	9	9	3	7	8	9	10	11	19	24	36	51	54	58
		54	10	11	3	8	10	11	12	23	24	28	30	35	48	51
		55	14	18	19	20	21	23	28	32	36	37	49	50	51	53
		56	17	2	2	5	8	22	24	32	36	40	41	42	49	53
18-Mar	77	57	7	53	11	13	20	31	35	36	37	47	50	53	55	58
		58	18	16	1	7	16	17	19	20	26	33	45	46	47	59
		59	19	42	6	15	20	27	31	34	35	42	53	54	55	59
		60	20	56	2	9	16	22	26	34	37	38	47	48	52	56
19-Mar	78	61	2	37	3	8	11	15	16	17	31	36	37	44	47	58
		62	3	24	6	10	17	19	24	25	26	33	37	44	55	59
		63	16	6	3	6	13	19	27	30	38	40	42	48	52	53
		64	17	39	4	6	7	16	17	18	31	33	39	49	50	53
20-Mar	79	65	1	10	4	6	10	11	12	21	26	36	48	54	55	56
		66	4	42	2	11	14	29	31	38	40	42	48	50	55	58
		67	17	25	3	4	11	12	17	19	25	38	41	49	53	55
21-Mar	80	68	22	7	7	12	21	22	23	30	38	37	40	44	46	47
		69	4	45	2	13	16	28	29	31	39	45	48	47	53	58
		70	6	51	4	10	17	21	31	39	42	46	51	53	54	58
		71	23	13	1	2	4	5	13	15	21	30	34	37	39	48
		72	23	25	2	9	13	14	25	29	33	38	39	43	45	50
22-Mar	81	73	3	35	7	9	10	16	18	21	23	33	35	36	37	47
		74	11	51	11	18	22	26	42	45	50	51	53	54	55	57
		75	14	10	1	10	14	15	19	20	22	28	38	41	42	51
		76	20	38	4	16	19	20	21	22	33	38	44	45	51	52
23-Mar	82	77	14	17	6	13	17	20	37	39	41	42	44	50	52	60
		78	19	10	4	6	10	15	21	26	28	34	43	51	52	54
		79	20	21	9	12	15	16	19	21	23	28	37	44	52	56
		80	22	10	5	7	8	10	20	30	42	44	49	50	55	59

Table 3 (Sheet 3 of 5)

Calendar day month 1994	Julian day	Grayling II Mission number	Mission Start Time 24 Hour EST	validation frame first or minute from Mission start	5 second images set 1	5 second images set 2	5 second images set 3	5 second images set 4	5 second images set 5	5 second images set 6	5 second images set 7	5 second images set 8	5 second images set 9	5 second images set 10	5 second images set 11	5 second images set 12
24-Mar	81	81	9	4	4	11	12	16	17	16	21	36	41	45	51	60
	82	82	14	47	5	7	8	17	25	26	28	35	42	47	48	56
	83	83	21	31	5	6	12	17	18	19	20	21	23	30	31	54
	84	84	22	3	3	4	19	21	24	33	34	36	52	53	64	57
25-Mar	85	85	6	48	7	15	17	18	23	25	31	38	39	41	46	47
	86	86	9	15	9	15	16	18	21	22	25	33	48	48	50	51
	87	87	20	9	9	10	11	12	17	17	25	37	41	47	53	54
	88	88	23	43	1	9	12	14	16	18	24	28	34	39	42	43
26-Mar	89	89	7	52	4	5	6	9	11	22	25	27	41	46	48	52
	90	90	10	51	2	8	11	19	40	41	42	47	50	51	54	58
	91	91	16	25	3	4	5	7	10	16	25	27	29	42	48	50
	92	92	23	32	3	7	14	32	34	37	42	43	50	52	54	57
27-Mar	93	93	3	50	3	11	14	15	18	21	26	29	50	51	53	60
	94	94	4	5	2	4	5	10	12	13	18	17	36	46	49	57
	95	95	6	11	5	6	7	11	19	23	30	39	41	47	56	60
28-Mar	96	96	10	48	1	4	10	17	32	35	37	40	42	44	45	48
	97	97	8	6	6	7	8	22	23	24	32	35	36	36	47	53
	98	98	13	4	6	10	18	27	31	32	33	36	44	52	56	58
	99	99	15	6	6	11	21	22	30	43	45	47	48	58	59	60
	100	100	19	26	2	7	8	11	17	22	28	33	35	38	52	53
29-Mar	101	101	5	52	21	22	28	31	35	41	42	51	52	55	59	60
	102	102	20	57	5	8	12	20	24	29	38	41	42	43	44	57
	103	103	21	59	2	5	8	21	22	24	25	42	51	55	57	58
	104	104	23	11	1	11	12	14	19	30	31	35	39	47	49	58
30-Mar	105	105	3	24	3	4	7	12	15	24	46	47	48	49	51	59
	106	106	11	20	10	16	17	20	21	22	35	40	41	42	45	58
	107	107	14	25	1	2	9	13	14	21	25	31	46	49	51	59
31-Mar	108	108	18	43	6	12	16	17	18	22	30	38	42	43	50	57
	109	109	4	2	2	14	15	17	20	22	23	26	31	45	48	47
	110	110	6	29	1	4	23	29	35	36	43	45	47	52	53	56
	111	111	10	20	5	6	18	19	20	21	23	29	38	43	51	54
	112	112	16	56	5	6	7	11	16	23	24	27	43	48	52	56
1-Apr	113	113	0	4	4	7	12	13	19	21	26	32	33	38	42	52
	114	114	2	26	2	8	9	24	26	27	29	29	30	46	54	56
	115	115	4	26	2	5	7	10	18	22	28	31	40	42	43	55
	116	116	23	36	3	5	6	10	15	29	35	36	48	49	50	56
2-Apr	117	117	1	7	2	3	5	7	11	18	22	29	33	36	51	59
	118	118	20	37	5	8	11	17	18	21	25	28	32	35	37	47
	119	119	22	12	4	7	11	12	13	20	22	35	37	47	48	56
	120	120	23	3	3	13	21	25	26	31	32	42	52	53	54	56

Table 3 (Sheet 4 of 5)

Calendar day month	Julian day	Graying II Mission number	Mission Start Time 24 Hour	validation frame first on minute from Mission start	5 second images set 1	5 second images set 2	5 second images set 3	5 second images set 4	5 second images set 5	5 second images set 6	5 second images set 7	5 second images set 8	5 second images set 9	5 second images set 10	5 second images set 11	5 second images set 12
1994			EST													
3-Apr	93	121	5	17	3	4	6	17	19	23	31	38	42	43	45	53
		122	14	5	5	7	11	12	13	14	23	28	33	41	42	48
		123	18	35	12	18	20	25	27	28	29	32	35	38	45	51
		124	19	24	4	7	8	13	20	22	24	6	50	52	58	59
4-Apr	94	125	2	48	7	11	17	18	19	21	24	33	40	48	53	58
		126	6	49	4	5	6	9	27	33	39	45	49	50	53	57
		127	9	54	9	14	15	19	20	21	22	31	32	36	52	54
5-Apr	95	128	13	27	1	7	12	18	22	23	25	28	27	31	45	56
		129	3	5	2	3	4	5	20	22	23	31	38	47	51	52
		130	13	28	7	15	16	17	26	28	29	30	39	45	48	58
		131	17	45	2	3	7	14	17	18	19	42	44	45	52	53
6-Apr	96	132	18	20	10	12	19	20	23	27	29	33	47	56	57	58
		133	8	18	1	10	11	17	18	19	28	29	32	37	53	59
		134	10	58	21	23	26	31	33	40	51	53	55	57	58	59
		135	14	23	6	7	10	14	23	24	29	35	37	48	51	53
		136	17	34	8	8	12	18	26	33	34	35	42	48	50	60
7-Apr	97	137	7	42	4	18	19	23	25	30	41	42	46	49	50	54
		138	15	18	6	12	18	21	24	31	37	45	47	52	55	56
		139	13	3	3	7	8	24	26	30	31	33	40	42	45	57
		140	20	24	3	11	13	14	15	17	24	37	38	43	45	46
8-Apr	98	141	2	15	6	7	14	15	18	20	24	37	44	50	54	56
		142	3	19	8	17	18	19	24	27	34	42	46	47	51	52
		143	16	59	3	17	18	19	20	25	29	30	31	34	52	59
		144	17	2	2	2	3	13	15	17	21	28	38	40	42	54
9-Apr	99	145	1	19	11	17	18	19	28	30	35	38	46	50	54	59
		146	4	4	2	3	4	31	38	39	40	41	42	49	51	58
		147	17	51	19	20	21	22	26	29	36	38	39	51	58	59
		148	22	34	2	3	19	20	29	34	46	40	43	52	56	58
10-Apr	100	149	4	59	6	7	16	20	22	23	28	28	29	52	53	59
		150	6	28	6	15	27	28	31	32	35	36	43	50	53	59
		151	22	4	4	9	11	14	17	21	29	48	50	54	55	58
		152	23	29	15	18	20	25	28	29	37	39	40	41	44	58
11-Apr	101	153	3	57	3	4	18	19	24	27	34	35	37	43	48	57
		154	11	19	13	17	18	19	25	26	35	38	46	55	58	57
		155	14	33	1	16	29	33	34	39	40	41	42	45	48	58
		156	20	54	28	30	31	32	34	43	44	45	48	53	54	58
12-Apr	102	157	14	35	21	26	31	33	35	38	39	45	46	48	50	52
		158	18	47	10	23	25	35	38	41	42	47	49	50	57	59
		159	20	2	2	6	16	17	19	30	38	40	43	50	54	55
		160	22	25	2	8	17	25	33	34	38	42	43	48	50	58

Table 3 (Sheet 5 of 5)

Calendar day month 1994	Julian day	Graying II Mission number	Mission Start Time 24 Hour EST	validation frame first or minute from Mission start	3 second Images set 1	5 second Images set 2	5 second Images set 3	5 second Images set 4	5 second Images set 5	5 second Images set 6	5 second Images set 7	5 second Images set 8	5 second Images set 9	5 second Images set 10	5 second Images set 11	5 second Images set 12
13-Apr	103	161	5	25	12	13	14	17	25	28	33	34	36	43	55	59
		162	7	53	26	30	31	33	37	38	39	40	46	47	52	53
		163	13	56	11	21	24	28	30	32	43	48	53	54	55	56
		164	16	36	3	4	7	9	10	14	22	24	35	36	37	56
14-Apr	104	165	2	5	2	5	10	17	20	25	27	42	48	50	51	60
		166	5	43	4	18	25	29	33	35	36	42	43	46	48	60
		167	15	14	3	14	15	31	34	38	44	45	46	52	57	59
		168	16	33	9	16	19	25	32	33	34	39	41	42	45	48
15-Apr	105	169	2	33	3	10	15	26	32	33	34	36	37	40	48	59
		170	6	23	3	9	23	24	25	32	42	46	46	50	58	60
		171	8	17	3	10	16	17	19	22	27	28	29	44	46	53
		172	14	14	8	9	10	12	14	16	20	24	25	53	54	59

**Table 4**  
**UTM Coordinates and Relative Angles of Terrain Features**

Image Number	Feature Description	UTM Coordinates, m		Relative Angles, deg	
		Easting	Northing	Azimuth	Elevation
1	Sandy bare soil (vehicle-test track)	687263	4951805	-3.43	-6.60
2	Grass (dormant)	687248	4951865	-16.63	-8.30
3	Sandy bare soil (vehicle-test track)	687298	4951844	-16.93	-6.30
4	Grass (dormant)	687250	4951922	-35.93	-9.30
5	Coniferous (pine) tree	687196	4951924	-34.83	-12.70
6	Coniferous (pine) treeline	687326	4951925	-37.53	-5.30
7	Deciduous (red oak) tree	687230	4951933	-39.73	-8.90
8	Snow or/and grass	687205	4951931	-38.83	-12.70
9	Coniferous (pine) treeline	687424	4952028	-55.23	-4.50
10	Grass (dormant)	687316	4952009	-58.03	-6.90
11	Mix of coniferous and deciduous treeline	687940	4952686	-81.13	-1.60
12	Deciduous (black oak) treeline	687356	4952441	-102.06	-2.94

**Table 5**  
**Image Characterization by Mission Using Video Data (Sheet 1 of 4)**

Mission #	Date	Time	Video Date	Image 1 Test Track	Image 2 Grass	Image 3 Test Track	Image 4 Grass	Image 5 Confident Inter-	Image 6 Confident Inter-	Image 7 Deciduous Tree	Image 8 Snow Cover/Grass	Image 9 Confident Inter-	Image 10 Grass	Image 11 Confident/Deciduous Tree	Image 12 Deciduous Tree	Comments
29	3/11	1	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 30
30	3/11	11	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
31	3/11	13	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
32	3/11	19	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 31, 35
33	3/12	2	N	PS	PS	TC	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 31, 35
34	3/12	4	N	PS	PS	TC	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 31, 35
35	3/12	9	Y	PS	PS	TC	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 31, 35
36	3/12	18	Y	PS	PS	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	Heavy snow coverage
37	3/13	0	N	SW	SW	PS	PS	NV	PS	NV	TC	NV	PS	NV	NV	Estimated using Mission 38, 39
38	3/13	2	N	SW	SW	PS	PS	NV	PS	NV	TC	NV	PS	NV	NV	Estimated using Mission 38, 39
39	3/13	14	Y	SW	SW	PS	PS	NV	PS	NV	TC	NV	PS	NV	NV	Making Stage
40	3/13	18	Y	SW	SW	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
41	3/14	5	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 40, 42
42	3/14	14	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Scouting During Mission
43	3/14	18	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
44	3/14	19	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 43, 47
45	3/15	2	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 43, 47
46	3/15	6	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 43, 47
47	3/15	9	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Scouting During Mission
48	3/15	13	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
49	3/16	3	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 49, 50
50	3/16	13	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
51	3/16	17	Y	NV	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
52	3/16	18	N	NV	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 51, 53
53	3/17	9	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
54	3/17	10	Y	PS	NV	PS	PS	NV	NV	NV	TC	NV	PS	PS	NV	
55	3/17	14	Y	NV	NV	PS	PS	NV	NV	NV	PS	NV	PS	NV	NV	
56	3/17	17	Y	NV	NV	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	

Legend:

TC=Total Snow Coverage  
PS=Partial Snow Coverage  
NV=No Visible Snow or Water  
SW=Standing Water

\* Terrain features analyzed in the IR Imagery analysis  
-- No Data / Available for missions 1-28

Table 5 (Sheet 2 of 4)

Mission	Date	Time	Video	Image 1	Image 2	Image 3	Image 4	Image 5	Image 6	Image 7	Image 8	Image 9	Image 10	Image 11	Image 12	Comments
57	3/18	7	Y	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	TC	Smoking During Mission
58	3/18	18	Y	TC	TC	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	
59	3/18	19	N	TC	TC	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	Estimated using Mission 58
60	3/18	20	N	TC	TC	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	Estimated using Mission 58
61	3/19	2	N	TC	TC	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	Estimated using Mission 58
62	3/19	3	N	TC	TC	TC	TC	PS	PS	NV	TC	PS	TC	PS	NV	Estimated using Mission 58
63	3/19	16	Y	PS	TC	TC	TC	NV	NV	NV	TC	NV	TC	NV	NV	Estimated using Mission 59
64	3/19	17	Y	PS	TC	TC	TC	NV	NV	NV	TC	NV	TC	NV	NV	
65	3/20	1	N	PS	TC	TC	TC	NV	NV	NV	TC	NV	TC	NV	NV	Estimated using Mission 64
66	3/20	4	N	PS	TC	TC	TC	NV	NV	NV	TC	NV	TC	NV	NV	Estimated using Mission 64
67	3/20	17	Y	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	
68	3/20	22	N	PS	PS	PS	PS	NV	NV	NV	TC	NV	PS	NV	NV	Estimated using Mission 67
69	3/21	4	N													
70	3/21	6	N													
71	3/21	22	N													
72	3/21	23	N													
73	3/22	3	N													
74	3/22	11	N	SW	SW	SW	PS	NV	NV	NV	PS	NV	PS	NV	NV	Estimated using Mission 75
75	3/22	14	Y	SW	SW	SW	PS	NV	NV	NV	PS	NV	PS	NV	NV	Large areas of standing water
76	3/22	20	N	SW	SW	SW	PS	NV	NV	NV	PS	NV	PS	NV	NV	Estimated using Mission 75
77	3/23	14	Y	SW	NV	NV	PS	NV	NV	NV	PS	NV	NV	NV	NV	
78	3/23	19	N	SW	NV	NV	PS	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 77/81
79	3/23	20	N	SW	NV	NV	PS	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 77/81
80	3/23	22	N	SW	NV	NV	PS	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 77/81
81	3/24	9	Y	SW	NV	NV	PS	NV	NV	NV	PS	NV	NV	NV	NV	
82	3/24	14	Y	NV	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
83	3/24	21	N	NV	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 82
84	3/24	22	N	NV	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 82
85	3/25	3	N	PS	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated on 20 Mission 86
86	3/25	9	Y	PS	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
87	3/25	20	N	NV	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 88
88	3/25	23	N	NV	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Mission 88

Legend:

TC=Total Snow Coverage

PS=Partial Snow Coverage

NV=No Visible Snow or Water

SW=Standing Water

\* Terrain features analyzed in the IR imagery analysis

Table 5 (Sheet 3 of 4)

Mission	Date	Time	Image 1 Test Track	Image 2 Grass	Image 3 Test Track	Image 4 Grass	Image 5 Confident Test/Confident Test/Grass	Image 6 Deciduous Test/Confident Test/Grass	Image 7 Deciduous Test/Grass	Image 8 Snow Cover/Grass	Image 9 Confident Test/Grass	Image 10 Grass	Image 11 Confident Test/Grass	Image 12 Deciduous Test/Grass	Comments
89	3/28	7	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
90	3/28	10	Y	SW	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
91	3/28	16	N												
92	3/28	23	N												
93	3/27	3	N												
94	3/27	4	N												
95	3/27	6	N												
96	3/27	10	Y	CS	CS	CS	PS	PS	PS	CS	PS		PS	NV	More Snow
97	3/28	8	Y	PS	PS	NV	NV	NV	NV	PS	NV	NV	NV	NV	
98	3/28	13	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
99	3/28	15	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
100	3/28	19	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
101	3/29	5	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 108
102	3/29	20	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 108
103	3/29	21	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 108
104	3/29	23	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 108
105	3/29	3	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 108
106	3/30	11	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
107	3/30	14	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
108	3/30	18	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
109	3/31	4	N	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	Estimated using Missions 100, 110
110	3/31	6	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
111	3/31	10	Y	NV	NV	NV	NV	NV	NV	PS	NV	NV	NV	NV	
112	3/31	16	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
113	4/01	0	N												
114	4/01	2	N												
115	4/01	4	N												
116	4/01	23	N												
117	4/02	1	N												
118	4/02	20	N												
119	4/02	22	N												
120	4/02	23	N												

Legend:

TC=Total Snow Coverage

PS=Partial Snow Coverage

NV=No Visible Snow or Water

SW=Swelling Water

\* Terrain features analyzed in the IR imagery analysis.



Table 5 (Sheet 4 of 4)

Mission	Date	Time	Image 1 Test Track	Image 2 Cross	Image 3 Test Track	Image 4 Cross	Image 5 Confidence Test	Image 6 Confidence Test	Image 7 Confidence Test	Image 8 Snow Cover/Cross	Image 9 Confidence Test	Image 10 Cross	Image 11 Confidence Test	Image 12 Confidence Test	Comments
121	4/03	5	N												
122	4/03	14	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
123	4/03	18	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 122, 125
124	4/03	19	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 122, 128
125	4/04	2	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 122, 128
126	4/04	6	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
127	4/04	9	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
128	4/04	13	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
129	4/05	3	N												
130	4/05	13	Y	PS	CS	CS	PS	PS	PS	CS	PS	CS	PS	PS	Heavy Snow Coverage
131	4/05	17	Y	PS	CS	CS	PS	PS	PS	CS	PS	CS	PS	NV	Snow covering line breaks
132	4/05	18	Y	PS	CS	CS	PS	PS	PS	CS	PS	CS	PS	NV	Snow covering line breaks
133	4/06	9	Y	PS	CS	CS	PS	PS	PS	CS	PS	CS	PS	NV	Complete Coverage
134	4/06	10	Y	PS	CS	CS	PS	PS	PS	CS	PS	CS	PS	NV	
135	4/06	14	Y	PS	PS	PS	NV	NV	NV	PS	NV	PS	PS	NV	Partial coverage
136	4/06	17	Y	NV	PS	PS	NV	NV	NV	NV	NV	NV	NV	NV	
137	4/07	7	Y	NV	PS	PS	NV	NV	NV	NV	NV	NV	NV	NV	Partial Snow
138	4/07	18	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
139	4/07	19	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 138
140	4/07	20	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 138
163	4/13	13	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
164	4/13	18	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
165	4/14	2	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 164, 167
166	4/14	5	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 164, 167
167	4/14	15	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Survey
168	4/14	16	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
169	4/15	2	N	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
170	4/15	6	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	Estimated using Mission 169, 170
171	4/15	8	Y	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	
172	4/15	14	Y	SW	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	

Legend:

TC=Total Snow Coverage

PS=Partial Snow Coverage

NV=No Visible Snow or Water

SW=Standing Water

\* Terrain features analyzed in the IR imagery analysis

**Table 6**  
**Terrain Features Analyzed in IR Imagery Analysis**

Feature Description	Image Number
Sandy bare soil (vehicle-test track)	3
Grass	10
Snow cover	8
Deciduous (red oak) tree	7
Deciduous (black oak) treeline	12
Coniferous (pine) tree	5
Coniferous (pine) treeline	6

Table 7

Summary of Terrain Features' LWB IR Signatures by Time of Day During 43-Day Exercise (04MAR-15APR94) (Continued)

WAVEBAND	FEATURE NAME	TIME INTERVAL	MEAN FEATURE TEMPERATURE (Deg. C)			STANDARD DEVIATION OF FEATURE (Deg. C)		
			MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM
LWB	BARE SOIL (SAND)	0000-0600	-10.83	-3.44	5.93	0.26	0.39	1.17
LWB	BARE SOIL (SAND)	0601-1200	-10.63	0.14	9.61	0.25	0.70	1.37
LWB	BARE SOIL (SAND)	1201-1800	-0.13	9.65	22.09	0.28	1.15	2.78
LWB	BARE SOIL (SAND)	1801-2400	-11.04	-3.47	3.90	0.34	0.83	1.98
LWB	GRASS	0000-0600	-11.24	-5.98	6.89	0.26	0.48	0.70
LWB	GRASS	0601-1200	-10.43	0.75	10.37	0.18	0.43	0.94
LWB	GRASS	1201-1800	-1.03	6.32	12.89	0.16	0.51	1.56
LWB	GRASS	1801-2400	-11.35	-4.56	2.41	0.21	0.58	1.04
LWB	SNOW OVER GRASS	0000-0600	-26.64	-14.53	-3.44	0.29	0.39	1.01
LWB	SNOW OVER GRASS	0601-1200	-9.63	-3.41	-0.39	0.30	0.54	0.84
LWB	SNOW OVER GRASS	1201-1800	-12.68	-4.35	0.11	0.36	0.64	1.06
LWB	SNOW OVER GRASS	1801-2400	-15.23	-6.99	-1.38	0.29	0.44	0.76
LWB	DECIDUOUS (RED OAK) TREE	0000-0600	-17.67	-6.75	7.75	0.24	0.77	2.25
LWB	DECIDUOUS (RED OAK) TREE	0601-1200	-7.37	0.55	10.82	0.22	0.39	1.33
LWB	DECIDUOUS (RED OAK) TREE	1201-1800	-7.76	4.70	21.50	0.20	1.01	2.50
LWB	DECIDUOUS (RED OAK) TREE	1801-2400	-11.34	-3.56	4.31	0.27	0.83	2.04
LWB	DECIDUOUS (BLACK OAK) TREELINE	0000-0600	-15.56	-5.89	8.45	0.18	0.38	0.71
LWB	DECIDUOUS (BLACK OAK) TREELINE	0601-1200	-7.37	0.40	11.94	0.19	0.51	1.31
LWB	DECIDUOUS (BLACK OAK) TREELINE	1201-1800	-9.93	4.47	20.44	0.17	0.53	1.13
LWB	DECIDUOUS (BLACK OAK) TREELINE	1801-2400	-11.85	-3.41	5.21	0.19	0.37	0.60
LWB	CONIFEROUS (PINE) TREE	0000-0600	-17.44	-6.43	8.37	0.21	0.39	0.81
LWB	CONIFEROUS (PINE) TREE	0601-1200	-8.15	0.01	11.04	0.19	0.58	0.88
LWB	CONIFEROUS (PINE) TREE	1201-1800	-9.03	4.03	20.17	0.19	0.51	1.04
LWB	CONIFEROUS (PINE) TREE	1801-2400	-11.75	-2.60	5.13	0.23	0.38	0.79
LWB	CONIFEROUS (PINE) TREELINE	0000-0600	-16.22	-6.37	8.14	0.30	0.53	1.16
LWB	CONIFEROUS (PINE) TREELINE	0601-1200	-8.44	-0.16	11.12	0.26	0.48	1.16
LWB	CONIFEROUS (PINE) TREELINE	1201-1800	-9.53	3.84	19.70	0.23	0.71	1.60
LWB	CONIFEROUS (PINE) TREELINE	1801-2400	-11.55	-2.83	5.13	0.27	0.50	1.17

Table 7 (Concluded)

WATERBAND	FEATURE NAME	TIME INTERVAL	MEAN FEATURE TEMPERATURE (Deg. C)			STANDARD DEVIATION OF FEATURE (Deg. C)		
			MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM
SUB	BARE SOIL (SAND)	0000-0600	-6.89	-0.68	7.89	0.42	0.61	1.03
SUB	BARE SOIL (SAND)	0601-1200	-6.26	4.67	12.58	0.36	1.38	4.08
SUB	BARE SOIL (SAND)	1201-1800	2.39	14.85	29.96	0.41	1.54	3.73
SUB	BARE SOIL (SAND)	1801-2400	-6.37	0.18	12.84	0.48	0.98	3.02
SUB	GRASS	0000-0600	-9.06	-4.12	8.08	0.39	0.65	0.89
SUB	GRASS	0601-1200	-7.22	4.18	12.33	0.35	0.65	1.07
SUB	GRASS	1201-1800	1.44	8.68	18.70	0.32	0.59	1.15
SUB	GRASS	1801-2400	-9.23	-2.36	5.63	0.47	0.83	2.43
SUB	SNOW OVER GRASS	0000-0600	-21.79	-11.13	-2.17	0.47	0.78	1.02
SUB	SNOW OVER GRASS	0601-1200	-0.83	1.58	5.10	0.46	0.94	1.82
SUB	SNOW OVER GRASS	1201-1800	-7.38	-0.96	2.86	0.53	0.84	1.71
SUB	SNOW OVER GRASS	1801-2400	-11.02	-4.44	0.70	0.45	0.59	0.77
SUB	DECIDUOUS (RED OAK) TREE	0000-0600	-13.75	-4.58	9.05	0.42	0.79	1.98
SUB	DECIDUOUS (RED OAK) TREE	0601-1200	-5.79	3.62	14.01	0.36	0.98	2.03
SUB	DECIDUOUS (RED OAK) TREE	1201-1800	-1.89	8.13	26.46	0.32	1.23	2.31
SUB	DECIDUOUS (RED OAK) TREE	1801-2400	-8.37	-1.50	9.62	0.43	0.86	2.37
SUB	DECIDUOUS (BLACK OAK) TREELINE	0000-0600	-12.94	-4.25	9.47	0.39	0.58	0.90
SUB	DECIDUOUS (BLACK OAK) TREELINE	0601-1200	-6.10	3.35	15.62	0.34	0.77	1.72
SUB	DECIDUOUS (BLACK OAK) TREELINE	1201-1800	-2.30	7.70	22.77	0.33	0.79	2.07
SUB	DECIDUOUS (BLACK OAK) TREELINE	1801-2400	-8.88	-1.78	7.19	0.43	0.58	1.07
SUB	CONIFEROUS (PINE) TREE	0000-0600	-14.37	-4.44	9.43	0.39	0.60	0.94
SUB	CONIFEROUS (PINE) TREE	0601-1200	-5.79	2.26	13.18	0.35	0.70	1.48
SUB	CONIFEROUS (PINE) TREE	1201-1800	-4.00	6.42	22.19	0.32	0.87	2.00
SUB	CONIFEROUS (PINE) TREE	1801-2400	-9.06	-1.10	8.18	0.42	0.58	1.59
SUB	CONIFEROUS (PINE) TREELINE	0000-0600	-12.16	-4.25	9.43	0.43	0.66	1.12
SUB	CONIFEROUS (PINE) TREELINE	0601-1200	-5.79	2.20	13.01	0.35	0.74	1.60
SUB	CONIFEROUS (PINE) TREELINE	1201-1800	-3.56	6.29	21.26	0.33	1.13	2.34
SUB	CONIFEROUS (PINE) TREELINE	1801-2400	-8.04	-0.79	8.08	0.47	0.67	2.26

# **Appendix A**

## **Summary of Hourly Averaged Meterological Data<sup>1</sup> Collected During Grayling II Exercise**

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<sup>1</sup> U.S. Army Cold Regions Research and Engineering Laboratory Meterological Station E3.

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
04MAR94:00:00	-0.4	0	90	959	0.1	17	.	0.00
04MAR94:01:00	-0.3	0	87	958	0.1	88	.	0.00
04MAR94:02:00	-1.1	0	90	957	0.1	9	.	0.00
04MAR94:03:00	-1.3	0	89	957	0.3	47	.	0.00
04MAR94:04:00	-1.4	0	89	956	0.9	43	.	0.00
04MAR94:05:00	-0.7	0	82	957	1.2	43	.	0.00
04MAR94:06:00	-0.7	0	82	957	0.6	132	.	0.00
04MAR94:07:00	-0.6	11	83	956	1.2	50	.	0.00
04MAR94:08:00	0.2	64	85	958	1.0	89	.	0.00
04MAR94:09:00	1.4	167	82	959	2.4	147	.	0.00
04MAR94:10:00	2.7	237	79	960	2.5	317	.	0.00
04MAR94:11:00	3.4	240	77	960	3.3	322	.	0.00
04MAR94:12:00	2.2	302	81	960	4.0	311	.	0.00
04MAR94:13:00	1.1	231	85	960	3.6	322	.	0.00
04MAR94:14:00	0.9	175	85	961	3.5	319	.	0.00
04MAR94:15:00	0.1	127	85	962	4.0	328	.	0.00
04MAR94:16:00	-0.1	67	85	963	3.9	323	.	0.00
04MAR94:17:00	-0.4	19	87	964	3.7	331	.	0.00
04MAR94:18:00	-0.2	2	84	965	3.7	335	.	0.00
04MAR94:19:00	0.2	0	78	965	3.6	338	.	0.00
04MAR94:20:00	0.1	0	90	966	2.7	328	.	0.00
04MAR94:21:00	-0.2	0	84	966	2.5	326	.	0.00
04MAR94:22:00	-0.4	0	84	966	2.4	317	.	0.00
04MAR94:23:00	-0.6	0	84	967	2.1	317	.	0.00
05MAR94:00:00	-0.7	0	84	967	2.1	313	.	0.00
05MAR94:01:00	-0.7	0	80	967	2.7	334	.	0.00
05MAR94:02:00	-0.9	0	78	968	2.6	330	.	0.00
05MAR94:03:00	-1.2	0	81	968	1.6	315	.	0.00
05MAR94:04:00	-1.4	0	81	969	2.3	327	.	0.00
05MAR94:05:00	-1.6	0	81	969	1.7	322	.	0.00
05MAR94:06:00	-2.0	0	82	970	1.0	323	.	0.00
05MAR94:07:00	-2.0	25	82	970	1.1	325	.	0.00
05MAR94:08:00	-1.7	148	80	971	1.3	308	.	0.00
05MAR94:09:00	-0.6	265	74	972	1.3	303	.	0.00
05MAR94:10:00	0.5	425	67	972	1.3	230	.	0.00
05MAR94:11:00	1.5	565	60	972	1.6	205	.	0.00
05MAR94:12:00	2.8	642	56	972	1.5	267	.	0.00
05MAR94:13:00	4.0	623	53	971	1.3	181	.	0.00
05MAR94:14:00	5.0	563	51	971	1.3	173	.	0.00
05MAR94:15:00	5.8	406	49	971	0.7	220	.	0.00
05MAR94:16:00	6.2	358	50	971	0.8	169	.	0.00
05MAR94:17:00	4.8	72	53	971	0.5	198	.	0.00
05MAR94:18:00	2.8	4	61	972	0.8	215	.	0.00
05MAR94:19:00	0.8	0	74	972	0.1	76	.	0.00
05MAR94:20:00	1.1	0	70	972	0.9	182	.	0.00
05MAR94:21:00	1.7	0	67	972	1.6	167	.	0.00
05MAR94:22:00	1.5	0	70	972	2.1	182	.	0.00
05MAR94:23:00	1.6	0	70	972	2.5	193	.	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
06MAR94:00:00	0.3	0	86	972	2.4	189	.	0.20
06MAR94:01:00	-0.3	0	94	971	1.6	177	.	1.00
06MAR94:02:00	-0.7	0	95	971	0.9	163	.	0.80
06MAR94:03:00	-0.8	0	96	970	0.9	163	.	0.90
06MAR94:04:00	-0.9	0	96	970	0.7	153	.	1.40
06MAR94:05:00	-0.7	0	96	970	1.3	164	.	1.70
06MAR94:06:00	-0.6	0	96	970	0.4	144	.	0.80
06MAR94:07:00	-0.4	7	96	970	0.8	148	.	0.40
06MAR94:08:00	0.0	62	95	970	0.6	181	.	0.00
06MAR94:09:00	0.3	146	95	970	1.1	180	.	0.00
06MAR94:10:00	1.2	190	95	970	1.1	177	.	0.00
06MAR94:11:00	1.9	241	94	969	1.7	201	.	0.00
06MAR94:12:00	2.3	252	94	969	1.6	223	.	0.00
06MAR94:13:00	3.3	283	92	969	0.9	238	.	0.00
06MAR94:14:00	4.4	250	90	969	1.1	242	.	0.00
06MAR94:15:00	5.0	191	85	969	1.0	236	.	0.00
06MAR94:16:00	5.3	130	87	969	0.9	232	.	0.00
06MAR94:17:00	4.9	35	89	970	0.9	208	.	0.00
06MAR94:18:00	3.9	3	92	970	0.6	227	.	0.00
06MAR94:19:00	3.0	0	95	970	0.5	177	.	0.00
06MAR94:20:00	3.2	0	93	971	1.5	257	.	0.00
06MAR94:21:00	1.4	0	95	971	2.5	275	.	0.00
06MAR94:22:00	0.7	0	96	971	1.6	249	.	0.00
06MAR94:23:00	0.6	0	95	971	1.7	241	.	0.00
07MAR94:00:00	0.6	0	93	971	2.1	270	.	0.00
07MAR94:01:00	0.7	0	91	971	2.9	301	.	0.30
07MAR94:02:00	0.5	0	89	972	2.0	320	.	0.00
07MAR94:03:00	0.2	0	90	972	1.0	280	.	0.00
07MAR94:04:00	-0.1	0	90	972	1.0	271	.	0.00
07MAR94:05:00	-0.1	0	89	972	1.4	273	.	0.30
07MAR94:06:00	-0.6	0	87	972	1.6	270	.	0.00
07MAR94:07:00	-1.3	13	88	972	1.4	258	.	0.00
07MAR94:08:00	-1.4	136	87	972	1.7	250	.	0.00
07MAR94:09:00	-0.7	335	83	972	1.8	252	.	0.00
07MAR94:10:00	0.9	415	73	972	2.2	252	.	0.00
07MAR94:11:00	2.0	613	65	972	3.6	252	.	0.00
07MAR94:12:00	3.8	681	49	971	4.0	265	.	0.00
07MAR94:13:00	3.3	671	41	970	4.2	264	.	0.00
07MAR94:14:00	3.5	603	38	970	4.7	259	.	0.00
07MAR94:15:00	3.4	486	37	969	4.7	260	43	0.00
07MAR94:16:00	2.1	304	46	970	4.7	260	46	0.00
07MAR94:17:00	0.3	75	58	970	3.9	269	50	0.00
07MAR94:18:00	-0.5	6	61	970	3.9	266	49	0.00
07MAR94:19:00	-1.2	0	63	970	3.3	272	50	0.00
07MAR94:20:00	-1.8	0	63	970	2.9	268	50	0.00
07MAR94:21:00	-2.3	0	50	971	4.1	274	49	0.00
07MAR94:22:00	-3.4	0	43	971	4.3	283	50	0.00
07MAR94:23:00	-4.1	0	43	971	4.3	281	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
08MAR94:00:00	-4.7	0	43	971	3.9	282	50	0.00
08MAR94:01:00	-5.1	0	54	971	3.9	272	44	0.00
08MAR94:02:00	-5.6	3	50	972	3.7	271	50	0.00
08MAR94:03:00	-6.1	0	57	971	3.3	278	43	0.00
08MAR94:04:00	-6.9	0	65	971	3.5	273	33	0.20
08MAR94:05:00	-7.7	0	63	971	3.1	264	33	0.20
08MAR94:06:00	-8.1	0	60	971	3.0	266	50	0.00
08MAR94:07:00	-8.3	27	63	972	3.6	271	29	0.00
08MAR94:08:00	-8.0	159	65	973	4.0	283	43	0.00
08MAR94:09:00	-7.3	301	57	974	4.8	288	42	0.00
08MAR94:10:00	-7.6	255	61	975	4.6	293	32	0.00
08MAR94:11:00	-7.2	381	62	975	5.0	290	35	0.00
08MAR94:12:00	-6.9	454	56	976	4.9	291	45	0.00
08MAR94:13:00	-6.2	659	49	976	5.5	298	50	0.30
08MAR94:14:00	-6.1	610	48	976	5.4	286	50	0.00
08MAR94:15:00	-5.7	495	47	977	4.5	287	50	0.00
08MAR94:16:00	-5.8	321	48	978	4.7	285	50	0.00
08MAR94:17:00	-6.3	139	49	979	4.6	284	50	0.00
08MAR94:18:00	-7.2	10	53	980	3.4	287	50	0.00
08MAR94:19:00	-8.0	0	57	981	1.3	266	50	0.00
08MAR94:20:00	-9.3	0	64	981	0.4	145	50	0.00
08MAR94:21:00	-11.7	0	79	981	0.2	111	50	0.00
08MAR94:22:00	-12.6	0	84	981	0.1	16	50	0.00
08MAR94:23:00	-13.4	0	85	982	0.2	98	50	0.00
09MAR94:00:00	-13.5	0	84	982	0.2	37	50	0.00
09MAR94:01:00	-14.1	0	85	982	0.1	9	50	0.00
09MAR94:02:00	-14.6	0	86	982	0.2	26	50	0.00
09MAR94:03:00	-15.4	0	85	982	0.5	42	50	0.00
09MAR94:04:00	-15.6	0	85	981	0.3	39	50	0.00
09MAR94:05:00	-15.8	0	85	981	0.3	40	50	0.00
09MAR94:06:00	-15.5	0	84	981	0.5	53	50	0.00
09MAR94:07:00	-14.8	56	84	981	0.5	54	50	0.00
09MAR94:08:00	-11.3	218	82	981	0.0	3	50	0.00
09MAR94:09:00	-7.1	338	70	981	0.6	184	50	0.00
09MAR94:10:00	-3.7	529	54	980	2.2	207	50	0.00
09MAR94:11:00	-2.6	647	47	980	2.5	197	50	0.00
09MAR94:12:00	-1.6	716	46	979	2.1	214	50	0.00
09MAR94:13:00	-1.2	554	43	977	1.7	228	50	0.00
09MAR94:14:00	-0.8	523	43	977	1.5	255	50	0.00
09MAR94:15:00	-1.2	286	42	976	1.1	290	50	0.00
09MAR94:16:00	-0.8	280	39	974	0.9	247	50	0.00
09MAR94:17:00	-0.6	134	39	974	0.6	197	50	0.00
09MAR94:18:00	-1.9	10	46	974	0.6	160	50	0.00
09MAR94:19:00	-4.3	0	60	973	0.3	93	50	0.00
09MAR94:20:00	-7.2	0	80	973	0.2	14	50	0.00
09MAR94:21:00	-8.4	0	81	973	0.4	66	50	0.00
09MAR94:22:00	-9.2	0	80	973	0.5	44	50	0.00
09MAR94:23:00	-9.8	0	82	972	0.3	27	50	0.00



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DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
10MAR94:00:00	-10.6	0	55	972	0.4	22	50	0.00
10MAR94:01:00	-11.6	0	87	971	0.3	21	50	0.00
10MAR94:02:00	-12.3	0	88	971	0.0	7	50	0.00
10MAR94:03:00	-13.1	0	87	971	0.2	25	50	0.00
10MAR94:04:00	-13.9	0	87	971	0.2	39	50	0.00
10MAR94:05:00	-14.4	0	87	971	0.4	40	48	0.00
10MAR94:06:00	-15.1	0	85	971	0.6	56	50	0.00
10MAR94:07:00	-15.4	103	84	972	3.5	54	50	0.00
10MAR94:08:00	-11.5	320	35	972	3.1	68	45	0.00
10MAR94:09:00	-6.6	195	76	973	0.8	260	49	0.00
10MAR94:10:00	-3.2	502	59	973	1.0	231	50	0.00
10MAR94:11:00	-1.8	596	56	973	1.2	240	50	0.00
10MAR94:12:00	-1.2	557	53	973	1.5	273	50	0.00
10MAR94:13:00	-1.0	288	50	973	1.9	308	50	0.00
10MAR94:14:00	-0.9	280	52	973	2.6	314	50	0.00
10MAR94:15:00	-1.3	270	53	974	2.9	321	50	0.00
10MAR94:16:00	-1.6	226	56	975	2.9	315	50	0.00
10MAR94:17:00	-2.5	78	58	976	2.7	326	50	0.00
10MAR94:18:00	-3.5	16	71	977	3.1	332	44	0.00
10MAR94:19:00	-4.4	0	76	978	2.5	333	47	0.00
10MAR94:20:00	-4.3	0	73	979	2.2	337	50	0.00
10MAR94:21:00	-4.5	0	74	980	2.6	267	50	0.00
10MAR94:22:00	-5.1	0	74	981	2.7	324	50	0.00
10MAR94:23:00	-6.1	0	74	981	2.6	256	50	0.00
11MAR94:00:00	-7.2	0	76	982	2.7	260	50	0.00
11MAR94:01:00	-7.8	0	78	983	1.5	247	50	0.00
11MAR94:02:00	-9.6	0	85	983	0.0	25	50	0.00
11MAR94:03:00	-11.6	0	88	983	0.0	0	48	0.00
11MAR94:04:00	-12.0	0	89	984	0.1	61	50	0.00
11MAR94:05:00	-12.5	0	88	985	0.1	29	50	0.00
11MAR94:06:00	-13.6	0	87	986	0.2	73	50	0.00
11MAR94:07:00	-13.7	181	87	986	0.0	16	50	0.00
11MAR94:08:00	-6.8	336	85	987	0.7	247	50	0.00
11MAR94:09:00	-4.3	434	77	988	0.6	150	50	0.00
11MAR94:10:00	-2.9	503	67	987	0.6	146	50	0.00
11MAR94:11:00	-1.7	593	59	987	0.8	120	50	0.00
11MAR94:12:00	-0.9	602	52	987	1.1	232	50	0.00
11MAR94:13:00	-0.5	635	47	987	1.1	289	50	0.00
11MAR94:14:00	.	.	.	.	.	.	.	.
11MAR94:15:00	.	.	.	.	.	.	.	.
11MAR94:16:00	.	.	.	.	.	.	.	.
11MAR94:17:00	0.0	141	40	986	1.2	272	50	0.00
11MAR94:18:00	-1.2	12	30	986	0.3	221	50	0.00
11MAR94:19:00	-4.5	0	75	986	0.0	90	50	0.00
11MAR94:20:00	-6.7	0	82	987	0.2	60	50	0.00
11MAR94:21:00	-7.7	0	83	987	0.0	82	50	0.00
11MAR94:22:00	-8.6	0	86	987	0.0	86	50	0.00
11MAR94:23:00	-9.4	0	87	987	0.3	54	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
12MAR94:00:00	-9.7	0	88	986	0.2	69	50	0.00
12MAR94:01:00	-10.4	0	88	986	0.6	47	50	0.00
12MAR94:02:00	-10.1	0	88	986	0.5	52	50	0.00
12MAR94:03:00	-9.5	0	87	986	0.3	61	50	0.00
12MAR94:04:00	-7.8	0	83	986	0.4	176	50	0.00
12MAR94:05:00	-6.7	0	79	986	0.3	155	50	0.00
12MAR94:06:00	-5.6	0	75	986	1.1	202	48	0.00
12MAR94:07:00	-5.5	18	82	985	1.0	193	16	0.00
12MAR94:08:00	-4.4	61	78	985	1.2	177	50	0.00
12MAR94:09:00	-2.9	117	68	984	1.5	178	50	0.00
12MAR94:10:00	-1.1	134	63	982	2.1	192	45	0.00
12MAR94:11:00	-1.0	144	77	981	2.6	204	2	0.00
12MAR94:12:00	-1.2	204	90	980	1.2	188	4	0.50
12MAR94:13:00	0.6	255	82	979	2.2	206	10	0.00
12MAR94:14:00	1.6	139	74	978	1.3	238	13	0.00
12MAR94:15:00	0.7	35	84	978	1.4	236	3	0.40
12MAR94:16:00	-0.7	28	95	978	0.5	280	0	1.30
12MAR94:17:00	-0.7	12	94	978	0.8	271	2	1.30
12MAR94:18:00	-0.7	4	92	978	1.1	291	3	0.30
12MAR94:19:00	-1.0	0	93	978	1.9	300	2	0.30
12MAR94:20:00	-1.3	0	94	979	2.0	320	1	0.00
12MAR94:21:00	-1.6	0	92	979	1.7	326	2	0.00
12MAR94:22:00	-2.0	0	90	979	1.3	292	3	0.00
12MAR94:23:00	-2.3	0	90	978	0.6	228	3	0.00
13MAR94:00:00	-2.6	0	92	978	0.3	201	2	0.00
13MAR94:01:00	-2.6	0	92	978	0.6	271	2	0.00
13MAR94:02:00	-3.6	0	91	978	0.4	241	2	0.00
13MAR94:03:00	-8.0	0	91	977	0.0	105	2	0.00
13MAR94:04:00	-11.0	0	91	977	0.1	164	2	0.00
13MAR94:05:00	-11.8	0	92	977	0.4	37	2	0.00
13MAR94:06:00	-12.2	0	91	977	0.3	18	1	0.00
13MAR94:07:00	-11.2	27	90	977	0.1	31	1	0.00
13MAR94:08:00	-8.9	104	91	977	0.2	45	2	0.00
13MAR94:09:00	-5.0	254	91	977	0.2	160	6	0.00
13MAR94:10:00	-2.5	491	88	977	0.5	232	11	0.00
13MAR94:11:00	-0.5	593	77	976	0.6	282	36	0.00
13MAR94:12:00	0.9	676	71	976	0.7	199	50	0.00
13MAR94:13:00	1.9	696	65	975	0.8	115	50	0.00
13MAR94:14:00	2.9	639	60	975	1.1	161	50	0.00
13MAR94:15:00	2.7	349	60	974	1.4	80	50	0.00
13MAR94:16:00	2.1	102	59	974	0.2	182	50	0.00
13MAR94:17:00	0.6	45	69	974	0.0	92	50	0.00
13MAR94:18:00	-1.7	9	79	974	0.1	107	50	0.00
13MAR94:19:00	-4.0	0	87	974	0.4	35	50	0.00
13MAR94:20:00	-5.5	0	89	974	0.5	28	50	0.00
13MAR94:21:00	-6.0	0	90	974	0.1	123	48	0.00
13MAR94:22:00	-5.7	0	90	974	0.1	84	12	0.00
13MAR94:23:00	-5.5	0	92	974	0.4	155	6	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
14MAR94:00:00	-5.0	0	89	973	0.3	190	5	0.00
14MAR94:01:00	.	.	.	.	.	.	.	.
14MAR94:02:00	.	.	.	.	.	.	.	.
14MAR94:03:00	.	.	.	.	.	.	.	.
14MAR94:04:00	.	.	.	.	.	.	.	.
14MAR94:05:00	.	.	.	.	.	.	.	.
14MAR94:06:00	.	.	.	.	.	.	.	.
14MAR94:07:00	.	.	.	.	.	.	.	.
14MAR94:08:00	-1.9	63	88	966	2.7	222	50	0.00
14MAR94:09:00	-1.9	71	90	965	3.7	209	50	0.00
14MAR94:10:00	-1.3	159	88	963	4.4	204	48	0.00
14MAR94:11:00	-0.3	255	81	961	5.3	208	12	0.10
14MAR94:12:00	0.5	169	77	960	5.0	210	7	0.00
14MAR94:13:00	1.1	148	73	959	4.4	217	6	0.00
14MAR94:14:00	0.1	132	84	958	4.3	216	11	0.10
14MAR94:15:00	-0.2	123	91	957	2.9	222	9	0.40
14MAR94:16:00	0.0	82	91	956	2.8	221	9	0.20
14MAR94:17:00	0.3	54	90	956	2.4	226	8	0.00
14MAR94:18:00	0.6	7	88	956	2.0	231	10	0.00
14MAR94:19:00	0.4	0	88	956	1.7	226	36	0.30
14MAR94:20:00	-0.9	0	93	956	0.8	200	50	0.00
14MAR94:21:00	-1.8	0	94	956	0.5	211	50	0.00
14MAR94:22:00	-1.0	0	95	956	1.5	213	48	0.00
14MAR94:23:00	-0.7	0	94	956	0.4	169	50	0.00
15MAR94:00:00	-2.0	0	96	955	0.1	112	50	0.00
15MAR94:01:00	-2.4	0	96	955	0.2	131	.	0.00
15MAR94:02:00	-1.9	0	96	955	0.3	157	.	0.00
15MAR94:03:00	-1.1	0	96	955	0.3	211	.	0.00
15MAR94:04:00	-0.3	0	93	955	1.5	289	.	0.50
15MAR94:05:00	-0.2	0	94	955	1.1	301	.	0.10
15MAR94:06:00	-0.1	1	94	956	1.0	274	.	0.00
15MAR94:07:00	-0.0	23	92	956	2.3	314	.	0.00
15MAR94:08:00	-0.6	84	89	957	3.4	339	.	0.00
15MAR94:09:00	-1.8	155	82	958	4.1	332	.	0.00
15MAR94:10:00	-3.0	296	77	959	4.8	331	.	0.00
15MAR94:11:00	-3.4	495	71	960	5.2	325	.	0.00
15MAR94:12:00	-4.8	451	70	961	5.5	319	.	0.00
15MAR94:13:00	-5.2	420	67	962	5.1	315	.	0.00
15MAR94:14:00	-6.2	430	65	963	6.4	315	.	0.00
15MAR94:15:00	-6.8	266	66	963	5.6	316	.	0.00
15MAR94:16:00	-7.4	200	68	964	5.5	328	.	0.00
15MAR94:17:00	-8.6	103	72	965	5.3	336	.	0.00
15MAR94:18:00	-9.9	18	72	966	4.9	322	.	0.00
15MAR94:19:00	-9.8	0	78	967	4.0	326	.	0.00
15MAR94:20:00	-9.4	0	79	967	4.6	328	.	0.00
15MAR94:21:00	-9.3	0	70	968	5.0	338	.	0.00
15MAR94:22:00	-9.5	0	62	968	4.5	336	.	0.00
15MAR94:23:00	-10.0	0	62	969	4.4	339	.	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
16MAR94:00:00	-10.4	0	63	969	4.4	342	50	0.00
16MAR94:01:00	-11.0	0	64	969	4.3	343	50	0.00
16MAR94:02:00	-11.9	0	61	969	4.1	338	50	0.00
16MAR94:03:00	-12.8	0	61	970	3.7	338	50	0.00
16MAR94:04:00	-13.6	0	63	970	5.6	339	50	0.00
16MAR94:05:00	-14.1	0	63	971	3.8	341	50	0.00
16MAR94:06:00	-14.7	1	63	972	3.8	341	50	0.00
16MAR94:07:00	-14.8	74	63	972	4.4	338	50	0.00
16MAR94:08:00	-13.9	264	60	973	4.7	335	50	0.00
16MAR94:09:00	-12.9	456	55	973	5.0	330	50	0.00
16MAR94:10:00	-11.9	606	53	973	4.9	330	50	0.00
16MAR94:11:00	-11.2	715	50	973	5.3	335	50	0.00
16MAR94:12:00	-10.6	764	48	973	5.6	333	50	0.00
16MAR94:13:00	-9.8	750	43	973	5.5	332	50	0.00
16MAR94:14:00	-9.2	476	44	973	5.6	324	50	0.00
16MAR94:15:00	-8.8	547	42	973	5.7	335	50	0.00
16MAR94:16:00	-8.5	373	40	973	5.2	337	50	0.00
16MAR94:17:00	-8.9	180	42	973	4.4	322	50	0.00
16MAR94:18:00	-10.2	17	48	974	3.6	328	50	0.00
16MAR94:19:00	-11.1	0	52	974	3.3	329	50	0.00
16MAR94:20:00	-12.0	0	56	975	3.0	339	50	0.00
16MAR94:21:00	-12.9	0	61	975	2.4	332	50	0.00
16MAR94:22:00	-13.7	0	65	975	1.9	342	50	0.00
16MAR94:23:00	-14.4	0	70	975	1.1	320	50	0.00
17MAR94:00:00	-14.6	0	72	975	1.3	334	50	0.00
17MAR94:01:00	-14.6	0	72	975	0.9	321	50	0.00
17MAR94:02:00	-15.2	0	77	975	0.4	313	50	0.00
17MAR94:03:00	-15.4	0	79	975	0.8	300	50	0.00
17MAR94:04:00	-16.4	0	82	974	0.3	163	50	0.00
17MAR94:05:00	-17.7	0	84	974	0.0	100	50	0.00
17MAR94:06:00	-18.1	2	84	974	0.1	118	50	0.00
17MAR94:07:00	-16.5	96	83	974	0.8	218	50	0.00
17MAR94:08:00	-13.3	290	75	974	1.3	284	50	0.00
17MAR94:09:00	-9.8	486	51	973	2.1	318	50	0.00
17MAR94:10:00	-7.5	591	40	973	2.1	294	50	0.00
17MAR94:11:00	-6.1	672	39	972	1.7	248	50	0.00
17MAR94:12:00	-4.6	725	38	971	1.3	254	50	0.00
17MAR94:13:00	-3.3	670	36	970	1.3	210	50	0.00
17MAR94:14:00	-2.5	532	36	968	1.1	236	50	0.00
17MAR94:15:00	-2.2	307	36	967	0.7	166	50	0.00
17MAR94:16:00	-2.5	128	36	966	0.3	216	50	0.00
17MAR94:17:00	-2.6	44	41	966	1.6	213	50	0.00
17MAR94:18:00	-2.9	5	44	965	1.4	201	50	0.00
17MAR94:19:00	-3.1	0	46	964	0.8	182	50	0.00
17MAR94:20:00	-3.7	0	59	964	2.1	189	18	0.00
17MAR94:21:00	-5.5	0	86	964	0.9	169	1	0.10
17MAR94:22:00	-5.9	0	91	964	1.0	166	1	0.10
17MAR94:23:00	-6.1	0	90	963	1.0	159	13	0.20

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
18MAR94:00:00	-6.2	0	89	961	1.0	134	43	0.00
18MAR94:01:00	-6.3	0	88	960	1.2	142	4	0.30
18MAR94:02:00	-6.4	0	90	958	0.8	131	2	0.20
18MAR94:03:00	-6.4	0	91	957	0.4	118	1	0.00
18MAR94:04:00	-6.5	0	92	956	1.3	77	0	0.00
18MAR94:05:00	-6.6	0	92	955	1.5	85	2	0.80
18MAR94:06:00	-6.7	0	91	955	1.6	70	1	0.40
18MAR94:07:00	-6.7	4	92	955	1.8	63	0	0.60
18MAR94:08:00	-6.4	13	92	955	1.9	46	0	1.00
18MAR94:09:00	-6.0	23	72	955	2.1	40	1	1.10
18MAR94:10:00	-5.4	194	91	955	2.9	40	1	0.20
18MAR94:11:00	-4.8	415	90	956	3.2	41	1	0.50
18MAR94:12:00	-4.3	483	88	956	3.4	45	10	0.60
18MAR94:13:00	-4.0	401	85	957	3.3	29	8	0.50
18MAR94:14:00	-3.3	339	81	958	3.5	70	7	0.50
18MAR94:15:00	-2.8	267	73	958	3.8	201	42	0.20
18MAR94:16:00	-2.9	192	70	960	3.7	315	28	0.00
18MAR94:17:00	-3.7	104	76	961	3.6	331	31	0.00
18MAR94:18:00	-4.6	14	74	962	3.5	337	47	0.00
18MAR94:19:00	-5.2	0	76	963	2.3	314	50	0.00
18MAR94:20:00	-6.1	0	83	964	1.3	300	45	0.10
18MAR94:21:00	-6.7	0	75	965	2.0	307	50	0.00
18MAR94:22:00	-7.4	0	61	966	3.0	311	50	0.00
18MAR94:23:00	-8.2	0	54	966	1.9	297	50	0.00
19MAR94:00:00	-8.9	0	59	966	1.6	269	50	0.00
19MAR94:01:00	-9.6	0	65	967	1.4	299	50	0.00
19MAR94:02:00	-12.9	0	75	967	0.3	208	50	0.00
19MAR94:03:00	-17.6	0	82	967	0.0	90	50	0.00
19MAR94:04:00	-20.9	0	84	967	0.1	74	50	0.00
19MAR94:05:00	-22.0	0	82	968	0.1	107	50	0.00
19MAR94:06:00	-22.8	3	81	968	0.0	90	50	0.00
19MAR94:07:00	-18.7	103	85	968	0.4	173	49	0.00
19MAR94:08:00	-9.2	334	83	968	1.2	271	50	0.00
19MAR94:09:00	-5.2	507	69	969	2.2	292	50	0.00
19MAR94:10:00	-2.7	609	57	969	3.4	293	50	0.00
19MAR94:11:00	-1.0	713	52	968	3.5	294	50	0.00
19MAR94:12:00	0.1	763	45	968	4.3	295	50	0.00
19MAR94:13:00	0.9	751	40	968	4.2	311	50	0.00
19MAR94:14:00	1.2	676	37	968	4.4	305	50	0.00
19MAR94:15:00	1.3	550	36	968	4.7	322	50	0.00
19MAR94:16:00	1.1	381	38	968	4.1	316	50	0.00
19MAR94:17:00	0.5	169	40	968	3.5	307	50	0.00
19MAR94:18:00	-1.1	18	46	969	2.4	296	50	0.00
19MAR94:19:00	-2.8	0	53	969	1.5	273	50	0.00
19MAR94:20:00	-4.7	0	57	969	0.5	253	50	0.00
19MAR94:21:00	-11.1	0	77	969	0.4	88	50	0.00
19MAR94:22:00	-13.8	0	84	970	0.0	106	50	0.00
19MAR94:23:00	-15.5	0	85	970	0.2	127	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
20MAR94:00:00	-16.4	0	84	970	0.8	39	50	0.00
20MAR94:01:00	-17.0	0	84	971	0.6	78	50	0.00
20MAR94:02:00	-17.7	0	84	971	0.2	83	50	0.00
20MAR94:03:00	-18.2	0	84	971	0.2	116	50	0.00
20MAR94:04:00	-18.3	0	84	972	0.3	50	50	0.00
20MAR94:05:00	-18.6	0	83	972	0.6	48	50	0.00
20MAR94:06:00	-18.8	3	82	972	0.6	51	50	0.00
20MAR94:07:00	-16.9	128	81	973	0.7	52	50	0.00
20MAR94:08:00	-11.3	329	75	972	0.4	55	50	0.00
20MAR94:09:00	-2.5	497	45	972	1.2	130	50	0.00
20MAR94:10:00	1.5	607	32	972	1.6	86	50	0.00
20MAR94:11:00	4.3	697	29	972	1.4	180	50	0.00
20MAR94:12:00	6.2	746	26	971	1.6	136	50	0.00
20MAR94:13:00	7.4	735	25	970	2.1	162	50	0.00
20MAR94:14:00	8.1	662	24	970	1.7	181	50	0.00
20MAR94:15:00	8.5	475	26	969	1.5	145	50	0.00
20MAR94:16:00	8.0	314	28	968	2.0	139	50	0.00
20MAR94:17:00	6.4	134	33	968	2.2	168	50	0.00
20MAR94:18:00	4.6	25	40	969	1.6	154	50	0.00
20MAR94:19:00	2.3	0	49	968	0.9	103	50	0.00
20MAR94:20:00	1.2	0	51	968	1.0	132	50	0.00
20MAR94:21:00	0.4	0	54	967	1.3	131	50	0.00
20MAR94:22:00	-0.2	0	63	967	1.6	143	50	0.00
20MAR94:23:00	-0.4	0	66	966	1.3	149	50	0.00
21MAR94:00:00	-0.1	0	66	965	1.5	149	50	0.00
21MAR94:01:00	-0.4	0	67	964	1.2	129	50	0.00
21MAR94:02:00	-0.4	0	69	963	1.2	108	50	0.00
21MAR94:03:00	-0.2	0	70	962	1.4	130	50	0.00
21MAR94:04:00	-0.6	0	81	960	1.4	101	20	0.00
21MAR94:05:00	-1.3	0	93	959	1.3	92	2	1.50
21MAR94:06:00	-1.2	0	94	959	1.4	74	1	1.90
21MAR94:07:00	-1.1	4	94	958	1.6	67	1	6.10
21MAR94:08:00	-1.0	22	94	957	1.6	73	1	2.90
21MAR94:09:00	-0.9	44	95	956	0.9	185	3	0.60
21MAR94:10:00	-0.8	59	95	956	0.6	125	3	0.50
21MAR94:11:00	-0.6	140	95	956	1.0	279	2	0.80
21MAR94:12:00	0.2	244	92	956	3.3	298	23	0.40
21MAR94:13:00	-0.3	174	90	956	4.7	315	50	0.00
21MAR94:14:00	-0.7	124	88	957	4.6	313	50	0.00
21MAR94:15:00	-1.1	65	91	956	5.0	307	31	0.00
21MAR94:16:00	-0.9	44	93	959	4.4	313	11	0.00
21MAR94:17:00	-0.2	52	89	960	4.1	315	34	0.00
21MAR94:18:00	0.0	26	83	961	3.3	314	50	0.00
21MAR94:19:00	-0.8	0	86	962	1.1	295	50	0.00
21MAR94:20:00	-1.9	0	90	963	0.6	247	44	0.00
21MAR94:21:00	-3.1	0	94	964	0.7	212	11	0.00
21MAR94:22:00	-3.4	0	95	964	0.6	201	22	0.00
21MAR94:23:00	-3.4	0	92	965	0.3	148	40	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
22MAR94:00:00	-5.1	0	93	965	0.2	147	13	0.00
22MAR94:01:00	-6.2	0	92	965	0.0	90	19	0.00
22MAR94:02:00	-6.9	0	92	965	0.0	90	27	0.00
22MAR94:03:00	-7.2	0	92	965	0.0	95	45	0.00
22MAR94:04:00	-7.3	0	92	965	0.0	85	49	0.00
22MAR94:05:00	-7.4	0	91	965	0.0	84	50	0.00
22MAR94:06:00	-7.3	4	91	965	0.2	92	50	0.00
22MAR94:07:00	-5.6	124	92	966	0.2	116	47	0.00
22MAR94:08:00	-0.3	232	85	965	0.8	227	49	0.00
22MAR94:09:00	6.2	466	58	965	2.7	232	50	0.00
22MAR94:10:00	9.3	599	39	964	4.0	240	50	0.00
22MAR94:11:00	10.0	710	36	964	4.8	238	50	0.00
22MAR94:12:00	10.9	763	35	963	4.6	241	50	0.00
22MAR94:13:00	11.6	734	34	962	4.7	236	50	0.00
22MAR94:14:00	11.9	663	35	961	5.1	226	50	0.00
22MAR94:15:00	12.3	518	35	961	3.7	234	50	0.00
22MAR94:16:00	12.1	311	36	961	3.5	224	50	0.00
22MAR94:17:00	10.9	103	41	961	3.2	216	50	0.00
22MAR94:18:00	9.5	30	46	961	2.4	220	50	0.00
22MAR94:19:00	7.6	0	50	962	1.3	223	50	0.00
22MAR94:20:00	6.6	0	55	962	1.4	218	50	0.00
22MAR94:21:00	5.5	0	61	962	1.1	213	50	0.00
22MAR94:22:00	3.4	0	70	963	1.2	109	50	0.00
22MAR94:23:00	-0.5	0	86	963	0.2	75	39	0.00
23MAR94:00:00	-1.6	0	90	964	0.5	69	34	0.00
23MAR94:01:00	-1.3	0	90	964	0.4	59	50	0.00
23MAR94:02:00	-1.4	0	88	964	1.1	49	50	0.00
23MAR94:03:00	-2.1	0	89	964	0.2	127	41	0.00
23MAR94:04:00	-3.4	0	93	965	0.2	89	13	0.00
23MAR94:05:00	-3.8	0	92	965	0.9	46	12	0.00
23MAR94:06:00	-3.9	4	92	965	1.0	50	12	0.00
23MAR94:07:00	-2.6	75	90	966	0.5	74	18	0.00
23MAR94:08:00	0.5	216	81	966	1.2	47	49	0.00
23MAR94:09:00	3.6	346	65	967	3.3	41	50	0.00
23MAR94:10:00	5.1	506	58	967	3.3	43	50	0.00
23MAR94:11:00	6.6	565	49	966	2.8	54	50	0.00
23MAR94:12:00	7.5	487	46	966	2.4	68	50	0.00
23MAR94:13:00	8.4	545	43	966	2.7	82	50	0.00
23MAR94:14:00	8.8	423	42	965	2.6	82	50	0.00
23MAR94:15:00	8.8	364	43	965	2.6	74	50	0.00
23MAR94:16:00	9.2	335	41	964	3.2	73	50	0.00
23MAR94:17:00	7.6	154	45	964	3.1	67	50	0.00
23MAR94:18:00	5.3	12	49	965	3.0	69	50	0.00
23MAR94:19:00	3.2	0	59	965	2.4	69	26	0.10
23MAR94:20:00	1.6	0	69	964	2.0	74	46	0.10
23MAR94:21:00	1.0	0	70	965	1.8	83	48	0.10
23MAR94:22:00	0.9	0	71	964	2.2	70	49	0.00
23MAR94:23:00	1.2	0	71	963	2.8	89	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
24MAR94:00:00	0.8	0	75	961	2.8	92	50	0.00
24MAR94:01:00	1.5	0	75	960	2.9	91	50	0.00
24MAR94:02:00	1.9	0	76	959	3.1	75	37	0.70
24MAR94:03:00	1.3	0	84	958	2.4	69	30	0.60
24MAR94:04:00	0.6	0	86	957	2.3	63	50	0.00
24MAR94:05:00	0.1	0	87	957	2.2	71	50	0.00
24MAR94:06:00	-0.2	1	90	957	1.2	101	35	0.20
24MAR94:07:00	-0.2	10	92	957	0.5	100	13	0.10
24MAR94:08:00	0.0	30	93	957	0.5	177	5	0.00
24MAR94:09:00	1.0	45	89	958	3.2	248	12	0.00
24MAR94:10:00	0.1	60	87	959	4.2	249	33	0.00
24MAR94:11:00	-0.0	96	85	959	4.4	253	50	0.00
24MAR94:12:00	0.3	212	83	960	4.5	267	16	0.00
24MAR94:13:00	-0.0	160	83	961	5.2	276	28	0.00
24MAR94:14:00	-0.3	150	80	962	5.1	270	40	0.00
24MAR94:15:00	-1.4	111	83	963	5.4	283	12	0.00
24MAR94:16:00	-2.6	57	81	965	5.7	264	29	0.00
24MAR94:17:00	-3.4	36	78	967	5.9	298	50	0.00
24MAR94:18:00	-3.9	7	75	968	5.3	298	50	0.00
24MAR94:19:00	-4.4	0	74	970	5.7	299	30	0.00
24MAR94:20:00	-4.8	0	72	971	5.4	302	49	0.00
24MAR94:21:00	-5.1	0	72	972	4.2	307	50	0.00
24MAR94:22:00	-5.3	0	74	973	4.2	304	33	0.00
24MAR94:23:00	-5.6	0	78	973	3.7	309	19	0.00
25MAR94:00:00	-5.7	0	76	973	4.3	324	33	0.00
25MAR94:01:00	-6.1	0	77	973	3.9	335	43	0.00
25MAR94:02:00	-6.4	0	75	974	4.0	331	50	0.00
25MAR94:03:00	-6.5	0	74	974	2.6	327	50	0.00
25MAR94:04:00	-6.3	0	77	975	2.5	318	50	0.00
25MAR94:05:00	-6.2	0	78	975	3.4	321	38	0.00
25MAR94:06:00	-6.6	4	78	976	3.6	332	34	0.00
25MAR94:07:00	-6.6	59	76	977	3.4	331	50	0.00
25MAR94:08:00	-5.9	268	71	977	3.3	325	50	0.00
25MAR94:09:00	-4.8	482	62	977	3.9	328	50	0.00
25MAR94:10:00	-3.3	631	57	977	3.4	302	50	0.00
25MAR94:11:00	-1.8	740	53	978	3.3	317	50	0.00
25MAR94:12:00	-0.7	791	48	977	3.6	311	50	0.30
25MAR94:13:00	0.1	780	46	977	4.0	331	50	0.00
25MAR94:14:00	0.8	704	45	977	3.8	324	50	0.00
25MAR94:15:00	1.5	581	41	977	3.1	302	50	0.00
25MAR94:16:00	1.6	414	37	977	3.0	182	50	0.00
25MAR94:17:00	1.0	219	39	977	2.5	112	50	0.00
25MAR94:18:00	-0.4	39	47	977	1.3	159	50	0.00
25MAR94:19:00	-2.7	0	57	978	0.9	304	50	0.00
25MAR94:20:00	-3.5	0	59	978	1.1	256	50	0.00
25MAR94:21:00	-5.3	0	72	979	0.1	138	50	0.00
25MAR94:22:00	-7.6	0	83	978	0.5	60	50	0.00
25MAR94:23:00	-8.6	0	85	978	0.4	75	50	0.00



DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/MR)
26MAR94:00:00	-9.1	0	87	978	0.3	56	50	0.00
26MAR94:01:00	-9.3	0	88	978	0.4	68	50	0.00
26MAR94:02:00	-9.3	0	88	978	0.4	55	50	0.00
26MAR94:03:00	-9.3	0	88	977	0.5	55	50	0.00
26MAR94:04:00	-8.9	0	88	977	0.1	80	50	0.00
26MAR94:05:00	-8.7	0	88	977	0.5	50	50	0.00
26MAR94:06:00	-7.0	5	83	977	0.3	125	50	0.00
26MAR94:07:00	-5.8	50	77	977	0.7	149	50	0.00
26MAR94:08:00	-3.4	298	68	976	1.3	156	50	0.00
26MAR94:09:00	-0.3	389	52	976	2.4	165	50	0.00
26MAR94:10:00	2.0	597	47	976	3.0	185	50	0.00
26MAR94:11:00	3.3	509	49	975	3.4	199	50	0.00
26MAR94:12:00	4.1	620	47	973	3.7	194	50	0.00
26MAR94:13:00	4.5	544	45	972	3.5	184	50	0.00
26MAR94:14:00	4.3	406	47	972	3.3	179	50	0.00
26MAR94:15:00	4.4	250	46	971	2.5	172	50	0.00
26MAR94:16:00	4.2	160	46	971	2.6	173	50	0.00
26MAR94:17:00	3.6	59	50	970	2.0	147	50	0.00
26MAR94:18:00	2.5	20	56	970	1.6	131	50	0.00
26MAR94:19:00	1.9	0	58	970	1.3	138	50	0.00
26MAR94:20:00	1.2	0	64	970	1.7	132	50	0.00
26MAR94:21:00	0.4	0	71	969	1.6	130	22	0.10
26MAR94:22:00	-0.9	0	84	969	1.6	146	2	0.00
26MAR94:23:00	-1.8	0	93	968	0.9	132	1	0.00
27MAR94:00:00	-1.9	0	95	967	1.5	109	1	0.40
27MAR94:01:00	-2.4	0	94	966	1.2	98	2	0.20
27MAR94:02:00	-2.6	0	94	965	1.4	88	2	0.10
27MAR94:03:00	-2.8	0	94	964	1.4	86	1	0.10
27MAR94:04:00	-3.0	0	94	964	1.4	70	1	0.30
27MAR94:05:00	-3.2	0	94	963	1.1	65	4	0.40
27MAR94:06:00	-3.0	2	94	963	1.3	70	7	0.10
27MAR94:07:00	-2.8	25	93	963	1.3	70	6	0.20
27MAR94:08:00	-2.1	114	92	962	1.4	90	38	0.20
27MAR94:09:00	-1.5	152	90	962	1.2	103	19	0.10
27MAR94:10:00	-0.9	185	88	963	0.9	114	10	0.00
27MAR94:11:00	-0.4	215	85	963	0.6	110	18	0.00
27MAR94:12:00	0.1	192	83	963	0.3	200	15	0.00
27MAR94:13:00	0.1	186	85	963	0.8	233	27	0.00
27MAR94:14:00	0.8	229	83	963	0.8	241	48	0.00
27MAR94:15:00	1.4	186	82	963	1.4	277	40	0.00
27MAR94:16:00	1.5	107	79	963	1.8	293	28	0.00
27MAR94:17:00	1.3	38	79	964	1.3	284	18	0.00
27MAR94:18:00	0.9	9	81	965	0.7	308	13	0.00
27MAR94:19:00	0.3	0	86	965	1.5	311	8	0.00
27MAR94:20:00	-0.2	0	91	966	1.0	277	5	0.00
27MAR94:21:00	-0.4	0	92	966	0.5	231	5	0.00
27MAR94:22:00	-0.9	0	94	966	0.2	153	3	0.00
27MAR94:23:00	-1.0	0	94	966	0.6	263	4	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
28MAR94:00:00	-1.1	0	93	966	0.6	234	6	0.00
28MAR94:01:00	-2.3	0	94	966	0.4	177	4	0.00
28MAR94:02:00	-2.3	0	95	966	0.2	163	5	0.00
28MAR94:03:00	-2.9	0	95	966	0.1	112	3	0.00
28MAR94:04:00	-3.3	0	95	966	0.3	174	4	0.00
28MAR94:05:00	-4.3	0	94	966	0.0	90	4	0.00
28MAR94:06:00	-3.8	5	95	966	0.1	156	3	0.00
28MAR94:07:00	-3.4	47	95	967	0.8	171	2	0.00
28MAR94:08:00	-2.9	88	96	967	1.5	249	0	0.00
28MAR94:09:00	-1.4	212	94	967	1.5	263	4	0.00
28MAR94:10:00	0.7	396	83	968	1.5	273	24	0.00
28MAR94:11:00	2.1	300	71	968	1.6	253	50	0.00
28MAR94:12:00	2.2	281	68	968	2.6	280	46	0.00
28MAR94:13:00	2.6	348	67	968	2.4	281	48	0.00
28MAR94:14:00	2.7	343	66	969	2.9	293	50	0.00
28MAR94:15:00	2.5	268	65	969	2.7	289	50	0.00
28MAR94:16:00	2.0	124	67	969	2.1	301	50	0.00
28MAR94:17:00	2.4	173	63	969	1.9	317	50	0.00
28MAR94:18:00	1.4	42	66	970	1.4	274	50	0.00
28MAR94:19:00	-1.4	0	78	970	0.5	171	50	0.00
28MAR94:20:00	-2.9	0	85	971	0.4	224	50	0.00
28MAR94:21:00	-3.5	0	89	971	0.1	81	21	0.00
28MAR94:22:00	-2.9	0	90	971	0.2	144	18	0.00
28MAR94:23:00	-2.1	0	88	972	0.5	157	13	0.10
29MAR94:00:00	-2.2	0	89	971	0.3	201	10	0.00
29MAR94:01:00	-2.3	0	90	972	0.3	227	9	0.00
29MAR94:02:00	-2.4	0	90	972	0.3	220	9	0.00
29MAR94:03:00	-2.5	0	92	972	0.0	90	5	0.00
29MAR94:04:00	-2.9	0	93	973	0.1	109	6	0.00
29MAR94:05:00	-3.2	0	93	973	0.0	92	6	0.00
29MAR94:06:00	-3.2	7	94	974	0.2	166	7	0.00
29MAR94:07:00	-1.9	61	91	974	0.9	80	8	0.00
29MAR94:08:00	-1.4	70	89	975	0.5	49	3	0.00
29MAR94:09:00	-1.2	117	89	975	0.9	135	2	0.00
29MAR94:10:00	-0.7	342	88	975	1.4	70	19	0.40
29MAR94:11:00	-1.1	123	86	975	1.7	89	8	0.30
29MAR94:12:00	-1.0	232	88	975	2.0	41	11	0.30
29MAR94:13:00	-0.7	296	89	976	2.9	35	7	-0.30
29MAR94:14:00	-0.6	315	90	976	2.7	49	2	0.00
29MAR94:15:00	-0.3	161	86	976	2.6	39	7	0.00
29MAR94:16:00	-0.5	79	81	977	2.2	65	28	0.30
29MAR94:17:00	-0.5	60	77	978	2.8	30	32	0.00
29MAR94:18:00	-1.2	23	80	978	2.8	42	11	0.00
29MAR94:19:00	-2.1	0	84	979	1.9	24	16	0.00
29MAR94:20:00	-2.7	0	87	980	1.0	16	13	0.00
29MAR94:21:00	-3.3	0	89	981	0.9	150	14	0.00
29MAR94:22:00	-4.2	0	89	981	0.4	229	15	0.00
29MAR94:23:00	-5.7	0	92	981	0.1	81	10	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
30MAR94:00:00	-5.7	0	93	982	0.2	171	10	0.00
30MAR94:01:00	-3.7	0	88	982	1.8	318	44	0.00
30MAR94:02:00	-4.4	0	85	982	1.9	324	50	0.00
30MAR94:03:00	-5.7	0	80	982	1.5	318	50	0.00
30MAR94:04:00	-7.1	0	80	983	0.7	304	50	0.00
30MAR94:05:00	-7.9	0	80	983	1.0	317	50	0.00
30MAR94:06:00	-8.4	15	82	983	1.0	285	50	0.00
30MAR94:07:00	-7.2	209	77	984	1.6	295	50	0.00
30MAR94:08:00	-5.4	446	69	984	2.0	296	50	0.00
30MAR94:09:00	-3.5	612	59	984	2.1	283	50	0.00
30MAR94:10:00	-1.8	686	56	984	2.2	266	50	0.00
30MAR94:11:00	-0.7	770	55	984	2.9	273	50	0.00
30MAR94:12:00	0.4	815	54	983	2.9	272	50	0.00
30MAR94:13:00	1.3	769	48	983	3.8	281	30	0.00
30MAR94:14:00	1.6	621	46	982	3.7	276	50	0.00
30MAR94:15:00	2.0	536	45	981	3.6	271	50	0.00
30MAR94:16:00	2.0	422	45	981	4.0	262	50	0.00
30MAR94:17:00	1.0	195	50	981	3.5	267	50	0.00
30MAR94:18:00	-0.2	43	54	981	2.7	262	50	0.00
30MAR94:19:00	-1.5	0	60	981	1.9	259	50	0.00
30MAR94:20:00	-2.6	0	63	981	1.4	252	50	0.00
30MAR94:21:00	-3.5	0	66	980	1.3	229	50	0.00
30MAR94:22:00	-4.0	0	68	980	1.0	222	50	0.00
30MAR94:23:00	-4.3	0	70	980	1.4	222	50	0.00
31MAR94:00:00	-4.1	0	72	979	1.5	228	50	0.00
31MAR94:01:00	-5.2	0	77	979	0.9	212	50	0.00
31MAR94:02:00	-6.8	0	85	978	0.4	180	48	0.00
31MAR94:03:00	-7.9	0	89	977	0.3	176	29	0.00
31MAR94:04:00	-8.5	0	90	977	0.0	104	19	0.00
31MAR94:05:00	-8.3	0	90	977	0.1	119	15	0.00
31MAR94:06:00	-7.9	17	90	976	0.3	209	15	0.00
31MAR94:07:00	-4.7	178		976	0.5	181	34	0.00
31MAR94:08:00	-0.9	343		976	2.7	254	50	0.00
31MAR94:09:00	1.0	457	60	975	3.3	256	50	0.00
31MAR94:10:00	3.4	559	50	975	3.7	259	50	0.00
31MAR94:11:00	4.4	638	44	974	4.0	253	50	0.00
31MAR94:12:00	5.7	778	39	974	4.4	255	46	0.00
31MAR94:13:00	6.8	753	36	973	4.6	257	46	0.00
31MAR94:14:00	7.3	661	34	972	4.6	253	45	0.00
31MAR94:15:00	7.8	560	33	972	4.2	256	50	0.00
31MAR94:16:00	7.9	414	34	971	3.9	250	50	0.00
31MAR94:17:00	7.2	174	34	971	3.1	248	50	0.00
31MAR94:18:00	6.1	58	36	972	2.5	247	50	0.00
31MAR94:19:00	4.3	1	41	972	1.5	233	50	0.00
31MAR94:20:00	2.2	0	49	972	1.1	213	50	0.00
31MAR94:21:00	1.0	0	54	972	1.0	209	50	0.00
31MAR94:22:00	0.3	0	57	971	1.1	211	50	0.00
31MAR94:23:00	-0.5	0	61	971	0.9	213	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (°eq. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
01APR94:00:00	-2.2	0	70	971	0.7	179	42	0.00
01APR94:01:00	-4.6	0	84	971	0.2	93	19	0.00
01APR94:02:00	-5.5	0	90	971	0.0	89	12	0.00
01APR94:03:00	-6.1	0	90	971	0.3	52	11	0.00
01APR94:04:00	-6.4	0	88	971	0.6	46	19	0.00
01APR94:05:00	-7.0	0	89	971	0.2	80	13	0.00
01APR94:06:00	-7.3	18	90	972	0.4	45	11	0.00
01APR94:07:00	-4.1	238	83	972	0.1	85	19	0.00
01APR94:08:00	1.3	415	70	973	0.5	71	26	0.00
01APR94:09:00	3.8	411	49	973	1.2	39	50	0.00
01APR94:10:00	6.2	622	40	973	0.9	222	50	0.00
01APR94:11:00	7.6	699	37	973	1.3	178	50	0.00
01APR94:12:00	8.8	786	35	973	1.3	211	50	0.00
01APR94:13:00	10.0	714	34	973	2.0	192	50	0.00
01APR94:14:00	9.8	447	34	972	1.6	179	50	0.00
01APR94:15:00	9.5	253	34	972	1.6	144	49	0.00
01APR94:16:00	9.2	125	34	972	1.2	117	50	0.00
01APR94:17:00	8.4	51	40	972	1.9	98	50	0.00
01APR94:18:00	6.6	28	49	973	2.5	53	50	0.00
01APR94:19:00	4.6	0	39	973	2.0	98	50	0.00
01APR94:20:00	2.6	0	41	974	1.5	110	50	0.00
01APR94:21:00	1.2	0	45	974	0.5	132	50	0.00
01APR94:22:00	0.1	0	47	974	0.8	133	50	0.00
01APR94:23:00	-0.8	0	47	973	1.0	146	50	0.00
02APR94:00:00	-0.9	0	49	973	1.1	127	50	0.00
02APR94:01:00	-0.9	0	53	972	1.0	113	50	0.00
02APR94:02:00	-1.1	0	59	971	0.6	106	50	0.00
02APR94:03:00	-0.5	0	61	970	0.7	126	50	0.00
02APR94:04:00	-0.6	0	63	969	0.4	112	50	0.00
02APR94:05:00	-0.7	0	67	968	0.5	102	50	0.00
02APR94:06:00	-1.1	13	73	968	0.4	106	50	0.00
02APR94:07:00	-0.6	90	74	967	1.1	159	50	0.00
02APR94:08:00	2.2	231	66	966	1.8	182	50	0.00
02APR94:09:00	5.8	263	57	965	2.4	198	45	0.00
02APR94:10:00	9.3	435	50	964	3.5	202	38	0.00
02APR94:11:00	13.1	563	41	963	4.2	211	46	0.00
02APR94:12:00	16.0	620	34	962	5.1	232	31	0.00
02APR94:13:00	13.5	452	44	962	4.4	265	28	0.00
02APR94:14:00	10.9	564	49	963	5.5	271	36	0.00
02APR94:15:00	9.4	476	50	964	4.8	264	34	0.00
02APR94:16:00	6.9	233	56	964	5.2	292	48	0.00
02APR94:17:00	3.7	107	63	966	4.8	296	50	0.00
02APR94:18:00	2.0	33	63	966	4.9	298	50	0.00
02APR94:19:00	0.0	1	67	967	4.8	301	50	0.00
02APR94:20:00	-1.9	0	67	968	5.5	312	50	0.00
02APR94:21:00	-3.4	0	70	969	5.0	322	50	0.00
02APR94:22:00	-4.0	0	73	969	5.1	321	50	0.00
02APR94:23:00	-4.7	0	75	970	4.1	318	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
03APR94:00:00	-4.2	0	73	970	3.7	326	39	0.00
03APR94:01:00	-5.2	0	75	971	3.1	323	33	0.00
03APR94:02:00	-5.7	0	77	971	3.2	324	50	0.00
03APR94:03:00	-6.1	0	80	971	2.4	324	50	0.00
03APR94:04:00	-6.2	0	78	972	2.8	322	50	0.00
03APR94:05:00	-6.3	0	81	972	2.0	312	14	0.00
03APR94:06:00	-6.2	19	79	973	2.5	328	44	0.00
03APR94:07:00	-5.7	163	69	973	3.6	334	50	0.00
03APR94:08:00	-4.6	337	59	974	3.5	311	50	0.00
03APR94:09:00	-3.7	540	54	974	3.8	301	50	0.00
03APR94:10:00	-2.4	692	49	974	2.7	311	50	0.00
03APR94:11:00	-0.8	793	41	973	2.2	287	49	0.00
03APR94:12:00	0.8	836	37	973	2.1	302	50	0.00
03APR94:13:00	2.3	819	33	972	2.5	292	50	0.00
03APR94:14:00	3.2	741	32	972	3.0	290	50	0.00
03APR94:15:00	3.7	613	26	972	2.8	287	50	0.00
03APR94:16:00	4.5	445	27	972	2.4	267	50	0.00
03APR94:17:00	4.8	250	27	972	2.6	265	50	0.00
03APR94:18:00	2.8	57	32	972	2.4	288	50	0.00
03APR94:19:00	0.1	0	35	972	1.2	258	50	0.00
03APR94:20:00	-1.3	0	36	972	0.9	241	48	0.00
03APR94:21:00	-3.2	0	46	972	0.6	209	50	0.00
03APR94:22:00	-3.9	0	50	972	0.8	215	50	0.00
03APR94:23:00	-3.9	0	51	971	0.8	218	50	0.00
04APR94:00:00	-3.8	0	52	971	1.1	215	50	0.00
04APR94:01:00	-4.2	0	55	970	0.8	218	48	0.00
04APR94:02:00	-5.7	0	68	970	0.4	181	50	0.00
04APR94:03:00	-6.3	0	70	970	0.6	191	41	0.00
04APR94:04:00	-7.5	0	82	971	0.4	124	43	0.00
04APR94:05:00	-7.8	0	85	971	0.3	74	41	0.00
04APR94:06:00	-7.0	14	86	971	0.4	107	49	0.00
04APR94:07:00	-3.2	65	76	971	0.3	161	44	0.00
04APR94:08:00	0.5	363	64	970	1.6	191	50	0.00
04APR94:09:00	4.4	287	47	970	3.0	219	50	0.00
04APR94:10:00	5.8	411	42	969	3.7	208	50	0.00
04APR94:11:00	8.6	478	33	968	4.5	219	50	0.00
04APR94:12:00	9.2	314	33	968	4.9	223	49	0.00
04APR94:13:00	8.5	177	34	967	4.1	216	50	0.00
04APR94:14:00	8.1	160	37	967	5.1	221	50	0.00
04APR94:15:00	7.3	154	43	967	4.4	226	50	0.00
04APR94:16:00	6.1	83	51	967	3.2	233	46	0.10
04APR94:17:00	5.5	34	52	967	1.1	208	50	0.00
04APR94:18:00	5.4	12	54	967	2.1	234	46	0.00
04APR94:19:00	3.5	0	75	967	2.8	270	7	1.00
04APR94:20:00	1.2	0	92	967	0.9	260	1	2.60
04APR94:21:00	0.1	0	94	968	0.1	98	0	3.60
04APR94:22:00	-0.8	0	96	968	0.0	90	0	2.10
04APR94:23:00	-0.9	0	96	967	0.0	90	0	1.30

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
05APR94:00:00	-1.0	0	97	967	0.0	90	0	0.70
05APR94:01:00	-1.0	0	97	966	.	.	1	1.10
05APR94:02:00	-2.3	0	95	966	.	.	2	0.20
05APR94:03:00	-3.8	0	93	967	.	.	4	0.00
05APR94:04:00	-4.1	0	93	967	.	.	4	0.00
05APR94:05:00	-4.9	0	91	967	.	.	4	0.00
05APR94:06:00	-5.7	2	89	968	.	.	18	0.00
05APR94:07:00	-5.7	12	90	969	.	.	47	0.00
05APR94:08:00	-5.4	53	89	969	.	.	50	0.00
05APR94:09:00	-4.7	101	90	970	.	.	32	0.00
05APR94:10:00	-4.2	115	92	970	.	.	15	0.00
05APR94:11:00	-3.6	161	89	971	2.2	14	49	0.00
05APR94:12:00	-3.1	341	84	971	3.5	40	50	0.20
05APR94:13:00	-2.9	329	81	972	3.2	38	50	0.50
05APR94:14:00	-2.8	330	78	972	3.2	45	50	0.00
05APR94:15:00	-2.4	319	73	972	2.7	185	50	0.00
05APR94:16:00	-2.5	200	71	972	2.8	131	50	0.10
05APR94:17:00	-2.8	99	72	973	2.2	86	50	0.00
05APR94:18:00	-3.1	37	74	973	2.0	16	50	0.00
05APR94:19:00	-3.6	1	77	974	1.6	33	50	0.00
05APR94:20:00	-4.1	0	77	974	2.1	293	50	0.00
05APR94:21:00	-5.0	0	77	974	2.1	305	50	0.00
05APR94:22:00	-6.8	0	76	975	2.5	151	50	0.10
05APR94:23:00	-8.1	0	75	976	2.4	105	50	0.30
06APR94:00:00	-9.0	0	78	976	1.6	120	50	0.00
06APR94:01:00	-9.8	0	79	975	1.4	34	50	0.00
06APR94:02:00	-10.5	0	79	975	1.2	151	50	0.00
06APR94:03:00	-10.7	0	79	975	0.6	282	50	0.00
06APR94:04:00	-10.7	0	80	975	0.9	83	50	0.00
06APR94:05:00	-11.9	0	84	975	0.2	111	50	0.00
06APR94:06:00	-12.8	28	86	975	0.0	90	50	0.00
06APR94:07:00	-10.1	190	81	976	1.1	48	50	0.00
06APR94:08:00	-6.3	433	75	976	2.0	54	50	0.00
06APR94:09:00	-3.6	603	65	976	2.9	67	50	0.00
06APR94:10:00	-2.7	734	62	976	3.5	56	50	0.00
06APR94:11:00	-1.9	749	58	976	3.7	58	50	0.00
06APR94:12:00	-1.0	827	55	975	3.7	58	50	0.00
06APR94:13:00	-0.3	772	52	974	4.0	44	50	0.00
06APR94:14:00	0.0	683	48	973	4.3	41	50	0.00
06APR94:15:00	0.1	510	43	974	3.5	32	50	0.00
06APR94:16:00	-0.2	300	42	974	3.2	32	50	0.00
06APR94:17:00	-0.9	176	43	974	3.8	26	50	0.00
06APR94:18:00	-2.1	62	44	974	3.0	34	50	0.00
06APR94:19:00	-3.4	2	46	975	1.9	29	50	0.00
06APR94:20:00	-5.4	0	64	975	0.3	135	50	0.00
06APR94:21:00	-7.2	0	76	976	0.3	63	50	0.00
06APR94:22:00	-5.8	0	56	976	0.9	332	50	0.00
06APR94:23:00	-6.2	0	56	977	1.4	349	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (DEG. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
07APR94:00:00	-6.7	0	58	977	1.8	313	50	0.00
07APR94:01:00	-8.6	0	68	977	0.6	126	50	0.00
07APR94:02:00	-10.9	0	81	977	0.4	185	50	0.00
07APR94:03:00	-12.0	0	85	978	0.1	130	50	0.00
07APR94:04:00	-12.3	0	84	979	0.6	185	50	0.00
07APR94:05:00	-12.5	0	84	980	0.4	174	50	0.00
07APR94:06:00	-12.7	41	85	980	0.2	136	50	0.00
07APR94:07:00	-8.5	260	74	981	1.0	234	50	0.00
07APR94:08:00	-4.3	483	60	982	1.9	312	50	0.00
07APR94:09:00	-1.2	592	43	982	2.5	249	50	0.00
07APR94:10:00	0.5	717	35	983	3.1	173	50	0.00
07APR94:11:00	1.5	807	39	983	3.6	143	50	0.00
07APR94:12:00	2.7	847	38	982	3.2	180	50	0.00
07APR94:13:00	3.6	828	37	982	3.3	144	50	0.00
07APR94:14:00	4.3	749	35	982	2.9	106	50	0.00
07APR94:15:00	4.8	610	33	982	2.4	258	50	0.00
07APR94:16:00	4.9	454	34	982	2.4	275	50	0.00
07APR94:17:00	4.4	262	33	983	2.2	307	50	0.00
07APR94:18:00	3.5	81	35	983	1.6	320	50	0.00
07APR94:19:00	-0.4	1	57	983	0.5	172	50	0.00
07APR94:20:00	-4.8	0	80	984	0.6	72	50	0.00
07APR94:21:00	-6.0	0	84	984	0.4	36	50	0.00
07APR94:22:00	-6.9	0	87	985	0.3	59	50	0.00
07APR94:23:00	-7.7	0	88	985	0.5	49	50	0.00
08APR94:00:00	-8.3	0	87	986	0.5	36	50	0.00
08APR94:01:00	-8.9	0	88	985	0.4	58	50	0.00
08APR94:02:00	-9.1	0	87	985	0.7	39	50	0.00
08APR94:03:00	-9.2	0	87	985	0.6	32	50	0.00
08APR94:04:00	-9.3	0	87	985	0.6	33	50	0.00
08APR94:05:00	-9.6	0	87	985	0.7	34	50	0.00
08APR94:06:00	-9.4	54	86	985	0.8	48	50	0.00
08APR94:07:00	-4.7	215	78	986	0.5	110	50	0.00
08APR94:08:00	0.3	268	58	985	1.6	184	50	0.00
08APR94:09:00	3.6	393	43	985	3.4	194	50	0.00
08APR94:10:00	5.6	582	33	984	3.9	189	50	0.00
08APR94:11:00	6.2	573	32	984	4.2	192	50	0.00
08APR94:12:00	7.1	805	29	982	4.2	181	50	0.00
08APR94:13:00	8.2	705	30	981	3.8	171	50	0.00
08APR94:14:00	8.2	352	30	980	3.9	177	50	0.00
08APR94:15:00	8.1	260	30	978	3.7	175	50	0.00
08APR94:16:00	7.8	113	29	977	3.1	175	50	0.00
08APR94:17:00	7.2	77	31	976	2.6	170	50	0.00
08APR94:18:00	6.5	22	32	976	3.0	176	50	0.00
08APR94:19:00	5.8	1	35	975	2.5	168	50	0.00
08APR94:20:00	5.2	0	35	975	2.9	167	50	0.00
08APR94:21:00	4.7	0	33	975	3.0	180	50	0.00
08APR94:22:00	4.2	0	38	975	3.0	178	49	0.00
08APR94:23:00	3.6	0	49	973	2.1	161	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
09APR94:00:00	3.3	0	53	972	2.3	165	50	0.00
09APR94:01:00	3.3	0	56	971	2.2	191	50	0.00
09APR94:02:00	3.2	0	59	970	1.9	194	50	0.00
09APR94:03:00	3.5	0	61	970	2.0	220	41	0.00
09APR94:04:00	2.6	0	79	969	1.4	175	30	0.10
09APR94:05:00	2.0	0	85	967	0.6	174	21	0.10
09APR94:06:00	1.7	34	87	967	1.1	187	15	0.00
09APR94:07:00	3.9	162	78	967	2.2	193	42	0.00
09APR94:08:00	7.9	373	64	966	4.1	215	50	0.00
09APR94:09:00	11.2	556	51	966	4.5	223	50	0.00
09APR94:10:00	14.2	702	37	965	5.1	238	39	0.00
09APR94:11:00	15.1	802	28	965	5.8	248	14	0.00
09APR94:12:00	14.1	831	30	966	6.2	264	5	0.00
09APR94:13:00	13.3	817	35	966	5.8	259	25	0.00
09APR94:14:00	12.6	729	37	967	5.4	272	43	0.00
09APR94:15:00	12.2	613	39	967	5.4	266	40	0.00
09APR94:16:00	11.2	411	43	967	5.1	269	48	0.00
09APR94:17:00	10.3	250	46	968	4.2	271	49	0.00
09APR94:18:00	8.0	60	55	969	3.7	291	50	0.00
09APR94:19:00	5.6	3	63	970	3.2	287	50	0.00
09APR94:20:00	4.2	0	65	970	2.4	279	50	0.00
09APR94:21:00	3.5	0	66	971	1.5	270	50	0.00
09APR94:22:00	2.5	0	69	971	0.7	239	50	0.00
09APR94:23:00	0.5	0	79	971	0.7	180	43	0.00
10APR94:00:00	0.9	0	75	971	0.3	214	50	0.00
10APR94:01:00	1.5	0	74	971	0.7	225	50	0.00
10APR94:02:00	2.0	0	73	971	0.5	245	50	0.00
10APR94:03:00	2.0	0	73	971	0.9	262	50	0.00
10APR94:04:00	3.0	0	68	972	2.0	320	50	0.00
10APR94:05:00	2.0	0	72	972	1.3	313	50	0.00
10APR94:06:00	1.3	34	75	973	1.6	330	50	0.00
10APR94:07:00	2.2	100	72	974	2.9	326	50	0.00
10APR94:08:00	2.6	130	70	975	3.2	329	50	0.00
10APR94:09:00	3.2	244	66	976	3.9	296	50	0.00
10APR94:10:00	4.5	478	60	977	3.9	327	50	0.00
10APR94:11:00	5.7	601	56	978	3.8	319	50	0.00
10APR94:12:00	7.2	810	49	978	4.8	318	50	0.00
10APR94:13:00	7.9	838	46	978	4.6	306	50	0.00
10APR94:14:00	8.5	746	43	979	4.3	273	50	0.00
10APR94:15:00	8.9	628	39	980	3.9	311	50	0.00
10APR94:16:00	8.6	465	36	980	4.4	317	50	0.00
10APR94:17:00	7.9	270	33	981	4.2	300	50	0.00
10APR94:18:00	6.4	91	36	983	3.6	316	50	0.00
10APR94:19:00	4.0	2	43	983	2.2	324	50	0.00
10APR94:20:00	2.1	0	51	984	1.6	203	50	0.00
10APR94:21:00	-0.7	0	64	985	0.6	80	50	0.00
10APR94:22:00	-5.2	0	85	985	0.2	93	50	0.00
10APR94:23:00	-6.5	0	88	986	0.5	75	50	0.00



DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
11APR94:00:00	-7.2	0	89	986	0.3	157	50	0.00
11APR94:01:00	-8.0	0	89	987	0.2	70	50	0.00
11APR94:02:00	-8.4	0	90	987	0.4	54	50	0.00
11APR94:03:00	-8.5	0	89	988	0.3	64	50	0.00
11APR94:04:00	-8.7	0	90	988	0.2	102	50	0.00
11APR94:05:00	-8.7	0	89	989	0.6	46	50	0.00
11APR94:06:00	-8.2	27	89	990	0.6	47	50	0.00
11APR94:07:00	-5.0	143	87	990	0.6	68	50	0.00
11APR94:08:00	0.2	275	74	991	0.7	129	50	0.00
11APR94:09:00	3.4	379	56	990	1.8	118	50	0.00
11APR94:10:00	5.5	449	47	990	2.1	126	50	0.00
11APR94:11:00	7.5	675	39	990	2.3	147	50	0.00
11APR94:12:00	8.8	668	35	989	2.2	145	50	0.00
11APR94:13:00	9.5	593	33	989	2.1	158	50	0.00
11APR94:14:00	10.2	557	32	988	1.7	130	50	0.00
11APR94:15:00	10.5	410	29	987	1.8	130	50	0.00
11APR94:16:00	10.5	301	28	987	1.9	141	50	0.00
11APR94:17:00	10.0	174	27	986	1.9	143	50	0.00
11APR94:18:00	8.5	52	28	986	1.1	147	50	0.00
11APR94:19:00	6.0	1	35	986	0.4	112	50	0.00
11APR94:20:00	4.5	0	37	986	0.6	123	50	0.00
11APR94:21:00	2.0	0	48	986	0.5	88	50	0.00
11APR94:22:00	-1.0	0	65	985	0.6	48	50	0.00
11APR94:23:00	-1.7	0	65	985	0.8	56	48	0.00
12APR94:00:00	-1.1	0	62	984	1.0	49	50	0.00
12APR94:01:00	-2.6	0	71	984	0.4	59	50	0.00
12APR94:02:00	-0.8	0	60	982	1.0	83	50	0.00
12APR94:03:00	-0.4	0	59	982	1.2	75	50	0.00
12APR94:04:00	-0.4	0	60	981	1.2	59	50	0.00
12APR94:05:00	-2.3	0	71	981	0.9	54	50	0.00
12APR94:06:00	-2.2	24	70	980	2.0	43	50	0.00
12APR94:07:00	1.7	103	52	980	2.3	70	50	0.00
12APR94:08:00	4.1	185	42	979	2.5	85	50	0.00
12APR94:09:00	5.3	261	43	979	2.9	91	50	0.00
12APR94:10:00	6.8	284	39	978	3.3	98	50	0.00
12APR94:11:00	7.7	239	37	976	3.4	94	50	0.00
12APR94:12:00	8.2	224	41	975	3.4	104	39	0.00
12APR94:13:00	7.1	208	61	974	3.2	108	16	0.00
12APR94:14:00	5.7	198	76	972	3.6	103	37	0.00
12APR94:15:00	4.7	128	85	972	3.2	108	17	0.10
12APR94:16:00	4.0	64	92	970	3.2	93	4	0.90
12APR94:17:00	3.6	21	93	969	3.4	93	3	1.40
12APR94:18:00	3.7	5	94	969	2.2	110	1	4.20
12APR94:19:00	3.8	0	95	968	2.6	89	7	0.60
12APR94:20:00	3.9	0	95	967	2.5	98	13	0.00
12APR94:21:00	3.9	0	96	967	2.1	97	2	0.00
12APR94:22:00	3.7	0	97	966	1.7	100	1	2.34
12APR94:23:00	4.1	0	97	965	1.3	108	13	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATION (MM/HR)
13APR94:00:00	4.2	0	97	965	1.1	87	6	0.10
13APR94:01:00	4.0	0	97	963	1.5	86	1	0.00
13APR94:02:00	3.8	0	98	962	1.8	109	1	0.40
13APR94:03:00	3.7	0	98	961	0.9	257	4	0.00
13APR94:04:00	3.7	0	98	961	0.6	217	0	0.70
13APR94:05:00	3.9	0	98	960	1.2	120	1	1.70
13APR94:06:00	4.2	6	98	959	1.1	166	7	0.40
13APR94:07:00	4.4	25	98	959	0.4	202	3	0.00
13APR94:08:00	4.9	52	98	959	1.3	214	4	0.40
13APR94:09:00	5.3	100	98	959	1.4	226	4	0.80
13APR94:10:00	5.8	139	96	958	1.5	223	4	0.50
13APR94:11:00	5.9	95	95	958	1.8	225	6	0.30
13APR94:12:00	6.2	211	93	957	1.8	240	29	0.10
13APR94:13:00	6.6	129	89	957	1.8	243	47	0.00
13APR94:14:00	5.8	45	92	957	2.1	254	25	0.10
13APR94:15:00	5.7	62	92	957	2.1	249	19	0.30
13APR94:16:00	5.4	60	92	957	2.4	247	24	0.10
13APR94:17:00	4.9	18	93	958	2.2	252	12	0.00
13APR94:18:00	4.7	8	93	958	1.6	246	35	0.00
13APR94:19:00	4.4	3	94	958	1.6	227	16	0.00
13APR94:20:00	4.2	0	94	959	1.8	221	36	0.00
13APR94:21:00	4.4	0	93	959	1.8	226	16	0.00
13APR94:22:00	4.7	0	92	959	2.4	231	8	0.00
13APR94:23:00	4.9	0	91	959	2.9	231	7	0.00
14APR94:00:00	5.0	0	90	960	2.6	241	8	0.00
14APR94:01:00	4.9	0	90	960	2.3	247	8	0.00
14APR94:02:00	4.7	0	90	960	2.0	244	9	0.00
14APR94:03:00	4.7	0	90	960	1.7	241	8	0.00
14APR94:04:00	4.5	0	91	960	1.9	246	4	0.00
14APR94:05:00	4.5	0	91	961	1.8	246	6	0.00
14APR94:06:00	3.9	44	92	962	1.6	237	7	0.00
14APR94:07:00	3.5	181	88	962	1.8	229	7	0.00
14APR94:08:00	8.0	403	81	962	2.8	221	7	0.00
14APR94:09:00	10.6	564	71	963	2.4	239	10	0.00
14APR94:10:00	13.3	706	60	963	3.0	248	41	0.00
14APR94:11:00	15.3	802	52	963	3.7	246	50	0.00
14APR94:12:00	16.8	844	41	963	4.0	242	50	0.00
14APR94:13:00	18.0	819	36	963	4.0	243	50	0.00
14APR94:14:00	18.6	738	33	963	3.9	243	49	0.00
14APR94:15:00	19.0	609	32	963	3.2	250	49	0.00
14APR94:16:00	19.1	446	31	964	2.6	251	50	0.00
14APR94:17:00	18.8	252	31	964	2.2	243	48	0.00
14APR94:18:00	17.1	76	35	964	2.0	224	50	0.00
14APR94:19:00	12.8	2	53	965	0.5	141	50	0.00
14APR94:20:00	6.4	0	80	966	0.6	24	50	0.00
14APR94:21:00	3.9	0	87	967	0.6	18	50	0.00
14APR94:22:00	2.4	0	88	967	0.8	36	50	0.00
14APR94:23:00	1.8	0	90	967	0.8	29	50	0.00

DATE AND TIME OF COLLECTION	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	RAIN PRECIPITATIO (MM/HR)
15APR94:00:00	4.9	0	80	966	0.9	90	50	0.00
15APR94:01:00	8.6	0	69	965	0.8	121	50	0.00
15APR94:02:00	8.8	0	73	964	1.0	104	50	0.00
15APR94:03:00	10.2	0	76	963	0.9	113	49	0.00
15APR94:04:00	10.7	0	85	963	1.6	134	8	1.40
15APR94:05:00	10.3	0	91	961	2.1	123	7	0.00
15APR94:06:00	10.5	16	88	960	2.0	115	10	0.10
15APR94:07:00	11.3	73	82	959	2.2	151	28	0.00
15APR94:08:00	11.0	9	84	959	2.4	161	19	2.31
15APR94:09:00	10.4	27	93	958	2.8	159	1	5.50
15APR94:10:00	10.7	73	93	957	3.7	156	3	1.90
15APR94:11:00	12.3	214	91	955	3.2	159	36	0.00
15APR94:12:00	13.3	101	89	954	4.2	183	35	0.00
15APR94:13:00	13.0	38	94	955	3.7	196	2	0.60
15APR94:14:00	13.2	109	93	954	3.7	192	10	0.10
15APR94:15:00	13.2	23	92	954	3.9	189	3	0.00

# **Appendix B Image Metrics and 1-Min Meterological Data<sup>1</sup> Collected During Smart Weapons Operability Enhancement Scheduled 1-Hr Missions at Grayling II**

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<sup>1</sup> U.S. Army Cold Regions Research and Engineering Laboratory Meterological Station E3.



## GRAYLING II, BARE SOIL (SANDY) FEATURE, LWB DATA

STATION NUMBER	IMAGE DATE/TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE_90 MEASURES (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M^2)	RELATIVE HUMIDITY (PERCENT)	GAMMATIC PRESSURE (CHILLERS)	WIND SPEED (MPS)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (CM/HR)		
L00	200001:03:35	-12.3	-9.2	-7.5	-6.1	-4.8	1.8	3.1	-6.6	-7.2	0	965	0.0	90	50	0.00		
L00	200001:11:30	0.1	1.8	4.2	6.1	8.5	1.4	4.7	8.1	10.4	35	964	4.8	264	50	0.00		
L00	200001:14:30	0.1	3.7	7.0	8.8	12.9	1.5	5.0	-0.7	11.9	403	962	5.1	200	50	0.00		
L00	200001:20:33	-5.6	-2.9	-1.7	-1.6	-1.5	1.2	4.0	0.9	6.1	0	964	1.4	222	50	0.00		
L00	200001:16:17	6.7	0.1	9.3	9.5	11.5	13.0	1.1	3.4	0.3	49	965	2.4	86	50	0.00		
L00	200001:19:10	0.0	0.8	3.3	3.5	3.4	3.2	0.5	1.5	0.5	51	965	2.5	99	50	0.00		
L00	200001:22:00	-2.0	-1.4	-0.8	-0.9	-0.7	0.5	0.5	1.0	0.2	73	965	1.9	41	50	0.00		
L00	200001:09:04	-1.0	-0.4	0.2	0.1	0.5	1.0	0.3	1.0	-0.9	94	957	1.3	265	4	0.00		
L00	200001:14:46	-1.5	-0.7	-0.2	-0.1	0.5	1.0	0.4	1.1	-0.4	79	962	5.2	267	13	0.00		
L00	200001:21:31	-7.1	-5.8	-5.4	-5.1	-5.2	0.5	1.4	-0.4	-5.1	0	972	4.6	305	50	0.00		
L00	200001:22:03	-7.2	-6.3	-5.8	-5.7	-5.8	-4.5	0.4	1.4	0.3	73	976	3.7	309	40	0.00		
L00	200001:08:16	-6.3	-7.3	-6.6	-6.4	-6.5	0.5	1.4	-0.1	-6.7	7	976	3.4	314	50	0.00		
L00	200001:09:14	-7.0	-9.6	-9.6	-9.4	-9.5	0.8	2.7	-0.9	-8.3	0	977	4.7	349	50	0.00		
L00	200001:20:17	-12.6	-9.6	-7.8	-7.5	-7.8	1.2	3.4	-0.9	-3.3	0	978	1.5	0	0	0.00		
L00	200001:23:12	-16.1	-13.5	-11.7	-11.2	-11.0	-9.2	6.4	1.4	5.4	0.1	-0.6	0	979	0.0	90	0.00	
L00	200001:07:46	-7.5	-6.5	-5.0	-5.4	-5.4	-3.9	0.6	2.0	-0.2	73	977	0.0	166	50	0.00		
L00	200001:10:50	0.2	1.4	2.7	3.2	3.3	5.8	8.7	1.4	4.4	0.5	2.7	420	975	6.4	215	50	0.00
L00	200001:10:32	-2.7	-2.1	-1.5	-1.6	-1.0	-0.7	0.3	1.1	-0.4	90	963	0.1	119	50	0.00		
L00	200001:08:04	-4.5	-3.9	-3.3	-3.3	-3.4	-3.0	0.3	0.9	-0.7	90	967	1.5	233	0	0.00		
L00	200001:13:44	0.0	4.2	5.1	5.2	5.1	7.4	0.7	1.9	-1.0	47	966	3.0	302	50	0.00		
L00	200001:05:06	1.1	3.5	5.4	5.3	5.1	6.3	0.9	2.8	-1.0	46	969	2.5	299	50	0.00		
L00	200001:19:20	-4.1	-4.9	-4.1	-4.8	-4.1	-3.1	-0.9	0.4	1.0	0.1	-1.2	0	964	0.0	0	0.00	
L00	200001:03:52	-4.2	-3.4	-4.9	-4.4	-4.7	-4.0	-3.3	0.4	1.4	-0.5	-1.7	0	964	0.0	0	0.00	
L00	200001:20:14	-5.7	-4.8	-4.1	-4.1	-4.1	-3.5	-2.9	0.4	1.3	0.1	-2.9	0	968	0.0	20	0	0.00
L00	200001:21:57	-7.5	-5.4	-5.4	-5.4	-5.7	-4.8	-4.3	0.5	1.7	-0.6	-3.4	0	961	0.5	354	16	0.00
L00	200001:22:12	-8.9	-7.6	-7.2	-6.7	-6.8	-5.5	-4.2	0.7	2.1	0.5	-5.5	0	962	0.2	37	11	0.00
L00	200001:08:15	-9.9	-8.8	-8.3	-8.2	-8.2	-6.8	-5.9	0.6	2.2	0.5	-5.2	0	962	1.5	330	50	0.00
L00	200001:11:21	-1.1	1.0	2.1	2.6	2.4	4.5	6.3	1.1	3.5	0.8	-1.0	701	964	2.8	304	50	0.00
L00	200001:14:14	2.3	4.8	6.3	6.7	6.8	9.3	12.4	1.4	4.5	0.3	1.6	706	962	4.3	201	50	0.00
L00	200001:18:42	-6.9	-5.4	-4.2	-4.2	-4.2	-2.4	-1.0	0.8	2.7	0.2	-0.4	0	961	1.1	251	50	0.00
L00	200001:04:02	-16.5	-12.8	-10.4	-10.7	-10.0	-8.7	-6.2	1.2	4.0	0.0	-0.3	0	969	0.0	0	0.00	
L00	200001:06:35	-15.4	-12.2	-10.5	-10.3	-10.4	-9.1	-7.0	1.0	3.0	-0.2	-7.9	15	969	0.5	254	14	0.00
L00	200001:10:23	1.1	2.2	3.6	4.0	3.8	5.3	5.0	0.9	3.0	-0.2	3.3	473	977	0.5	250	50	0.00
L00	200001:16:23	6.7	0.4	9.9	10.4	10.4	12.8	14.3	1.3	4.5	0.3	7.9	50	975	3.5	253	50	0.00
L00	200001:08:13	-7.4	-6.5	-5.6	-5.4	-5.4	-4.0	-3.1	0.7	2.5	-0.1	-1.2	0	971	3.0	230	50	0.00
L00	200001:02:26	-10.5	-9.1	-7.4	-7.5	-7.7	-6.4	-5.3	0.8	2.7	-0.4	-5.4	0	965	0.5	221	50	0.00
L00	200001:14:07	-10.2	-8.4	-7.8	-7.5	-7.3	-5.8	-4.8	1.0	2.8	5.1	-4.5	0	969	0.0	90	14	0.00
L00	200001:20:19	-4.7	-3.4	-3.0	-4.0	-4.8	-3.4	-2.3	0.6	2.1	0.9	-0.6	0	973	1.2	136	50	0.00
L00	200001:01:05	-5.5	-4.4	-4.1	-4.1	-4.2	-3.4	-2.6	0.4	1.2	0.2	-0.8	0	972	1.6	115	50	0.00
L00	200001:20:37	-5.8	-4.9	-4.1	-4.1	-4.1	-3.2	-2.6	0.5	1.7	-0.3	-2.1	0	968	4.0	317	50	0.00



**GRAYLING II, BARE SOIL (SANDY) FEATURE, SWB DATA**



MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	HOM TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 90 SECONDS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPS)	WIND DIRECTION (DEGREES)	VISIBI- LITY (KM)	PRECIP- ITATION (MM)
73	23MAR94:10:35	-8.9	-5.8	-4.3	-3.7	-3.8	-1.8	-0.1	1.3	4.7	-7.2	0	92	965	8.0	90	50	0.00
74	23MAR94:11:50	6.0	7.0	9.3	10.1	10.1	12.5	16.7	1.4	6.8	10.4	737	35	965	4.8	244	50	0.00
75	23MAR94:14:19	5.4	7.7	12.9	12.2	11.7	16.1	17.5	1.9	6.4	11.9	683	34	962	5.9	230	50	0.00
76	23MAR94:20:35	1.3	2.3	2.9	3.1	3.1	4.7	6.2	0.7	2.4	6.1	482	54	962	1.6	222	50	0.00
77	23MAR94:14:17	9.5	12.1	12.5	13.6	13.6	15.8	18.3	1.1	3.7	8.9	482	43	965	2.6	86	50	0.00
78	23MAR94:19:10	1.4	2.7	3.7	3.7	3.5	4.5	5.7	0.5	1.8	4.8	0	51	965	2.5	50	50	0.00
79	23MAR94:12:06	-0.8	0.3	0.9	1.1	1.0	1.9	2.7	0.5	1.4	0.8	0	73	965	1.9	42	50	0.00
80	24MAR94:09:04	-0.1	1.1	1.8	1.8	1.7	2.5	3.2	0.5	1.4	0.4	35	94	967	1.3	265	4	0.00
81	24MAR94:14:46	0.6	1.7	2.5	2.6	2.6	3.4	4.2	0.5	1.8	0.3	206	79	962	5.2	267	13	0.00
82	24MAR94:21:31	-5.6	-4.1	-3.1	-3.0	-3.1	-2.0	-1.1	0.6	2.1	-0.5	0	72	972	4.6	306	50	0.00
83	24MAR94:12:03	-6.0	-4.4	-3.4	-3.3	-3.4	-2.3	-1.0	0.7	2.1	-0.2	0	73	972	3.7	309	49	0.00
84	24MAR94:10:14	-7.4	-5.6	-4.7	-4.6	-4.7	-3.6	-2.4	0.6	2.1	-0.2	7	78	976	3.4	316	50	0.00
85	24MAR94:09:14	-1.4	1.6	5.4	7.2	7.8	15.4	25.5	4.1	13.0	0.5	644	44	977	4.7	349	50	0.00
86	24MAR94:20:17	-6.8	-4.4	-3.0	-2.7	-2.9	-1.4	-0.3	0.9	3.1	-0.4	0	56	978	1.5	8	50	0.00
87	24MAR94:23:42	-10.8	-8.2	-7.2	-6.5	-6.6	-4.4	-2.4	1.2	3.8	0.1	44	75	977	0.8	148	50	0.00
88	24MAR94:07:48	-4.8	-2.3	-2.6	-2.3	-2.4	-1.5	-0.6	0.6	1.8	-0.4	0	85	978	0.8	90	50	0.00
89	24MAR94:10:58	4.8	7.2	10.7	12.6	12.6	18.6	22.3	3.5	11.4	2.7	428	49	975	4.4	215	50	0.00
90	24MAR94:18:32	-1.8	-0.6	0.1	0.3	0.2	1.1	2.4	0.5	1.6	-0.2	176	68	963	0.1	119	9	0.00
91	24MAR94:08:06	-11.9	-9.6	-8.2	-7.8	-8.1	-6.2	-4.4	0.5	1.6	-0.8	0	94	975	0.8	119	9	0.00
92	24MAR94:13:04	1.9	3.8	6.7	8.6	8.1	9.6	11.1	1.2	3.8	-3.1	43	96	967	1.5	233	6	0.00
93	24MAR94:15:06	2.8	5.1	9.2	8.6	8.1	16.1	11.4	1.5	5.0	-0.9	326	67	968	3.8	382	50	0.00
94	24MAR94:19:29	-4.1	-2.2	-1.6	-1.0	-1.1	0.1	1.2	0.7	2.2	-0.4	307	64	969	2.5	279	50	0.00
95	24MAR94:08:52	-4.7	-3.4	-2.7	-2.4	-2.4	-1.5	-0.3	0.6	1.9	-0.8	0	78	978	0.8	90	50	0.00
96	24MAR94:20:44	-4.1	-2.6	-1.9	-1.6	-1.6	-0.8	0.2	0.6	1.9	-0.5	0	94	973	0.8	90	5	0.00
97	24MAR94:21:57	-6.4	-4.6	-2.7	-2.7	-3.0	-1.6	-0.6	0.9	3.0	-0.6	0	87	980	0.8	38	8	0.00
98	24MAR94:23:12	-4.8	-3.0	-4.0	-3.7	-3.8	-2.6	-1.2	0.8	2.5	-0.2	0	89	981	0.6	336	16	0.00
99	24MAR94:05:15	-7.8	-5.5	-4.6	-4.4	-4.6	-3.4	-2.3	0.6	2.1	-0.8	0	92	981	0.2	37	11	0.00
100	24MAR94:11:21	2.3	7.2	11.0	11.5	11.5	15.3	18.9	2.4	8.1	-0.4	761	40	962	1.5	330	50	0.00
101	24MAR94:14:14	8.9	16.1	20.3	19.2	19.0	23.3	28.2	2.8	9.2	-0.4	786	47	962	2.8	306	50	0.00
102	24MAR94:18:42	-2.4	-1.2	-0.3	0.1	0.2	2.6	4.0	1.2	3.8	1.8	0	54	981	1.1	251	50	0.00
103	24MAR94:04:02	-11.2	-8.5	-6.6	-6.7	-6.9	-5.2	-3.3	1.0	3.4	-0.3	0	89	977	0.0	90	14	0.00
104	24MAR94:06:20	-9.2	-7.7	-6.0	-6.1	-6.3	-4.7	-3.4	0.9	3.4	-0.2	15	90	977	0.5	214	14	0.00
105	24MAR94:10:23	5.6	7.6	9.7	9.9	9.9	12.7	16.1	1.5	5.1	3.3	473	50	973	0.5	235	50	0.00
106	24MAR94:16:52	13.0	16.3	20.9	20.4	20.3	22.8	25.1	1.9	4.5	-1.0	320	34	971	0.5	221	50	0.00
107	24MAR94:04:12	-4.7	-3.0	-2.0	-1.9	-2.0	-1.0	0.3	0.6	2.0	-0.4	0	45	971	0.5	221	50	0.00
108	24MAR94:08:26	-7.8	-5.5	-4.1	-4.3	-4.4	-3.0	-1.9	0.6	2.5	0.0	0	90	971	0.8	90	14	0.00
109	24MAR94:04:07	-7.2	-5.8	-4.6	-4.7	-4.6	-3.0	-1.9	0.6	2.5	0.0	0	90	971	0.8	90	14	0.00
110	24MAR94:23:15	-4.8	-2.7	-1.9	-1.9	-2.0	-1.0	0.2	0.5	1.8	-0.4	0	47	973	1.2	156	50	0.00
111	24MAR94:01:05	-3.4	-2.4	-1.6	-1.6	-1.6	-0.8	0.1	0.5	1.4	0.3	0	51	972	1.4	115	50	0.00
112	24MAR94:20:37	-3.7	-2.4	-1.9	-1.8	-1.9	-1.0	-0.1	0.5	1.5	-2.1	0	47	968	6.0	317	50	0.00

## GRAYLING II, BARE SOIL (SANDY) FEATURE, SWB DATA

STATION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 90 DEGREES (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	VISIBILITY (KM)	PRECIPITATION (MM)
29	11/04/04 01:39	-18.3	-8.8	-6.9	-5.3	-2.8	14.5	2.3	6.8	-7.9	0	78	983	0.4	333	50	0.0
30	11/04/04 01:45	-1.4	1.4	7.5	6.5	10.6	14.5	2.9	9.2	-	-	-	-	-	-	-	-
31	11/04/04 01:51	-4.8	-5.3	-1.2	-1.8	-2.3	8.6	1.5	4.9	-3.2	0	72	984	0.6	90	50	0.0
32	11/04/04 01:59	-11.8	-8.9	-4.4	-3.5	-3.4	-2.0	1.8	5.5	-10.4	0	87	984	0.5	45	50	0.0
33	11/04/04 02:16	-8.4	-6.3	-3.7	-4.1	-2.4	-1.4	1.2	3.8	-7.9	0	86	984	0.4	220	50	0.0
34	11/04/04 02:25	-2.7	-1.4	-0.2	-0.3	0.7	1.4	0.6	2.1	-2.5	176	46	983	1.8	174	50	0.0
35	11/04/04 02:41	-8.1	-6.1	0.2	0.1	0.8	1.7	0.4	1.4	-0.7	2	92	979	0.4	291	3	0.0
36	11/04/04 02:59	-4.1	-3.8	-2.4	-2.3	-1.4	-0.4	0.5	1.4	-2.4	9	92	979	0.4	203	2	0.0
37	11/04/04 03:19	-7.2	-5.4	-4.9	-4.4	-2.9	-1.8	0.8	2.8	-3.0	0	91	979	0.4	90	2	0.0
38	11/04/04 03:25	1.0	2.6	6.4	6.4	9.4	16.9	2.2	7.0	2.8	541	58	974	0.4	194	50	0.0
39	11/04/04 03:44	-5.0	-2.9	-0.8	-1.1	0.2	3.2	0.9	3.1	-2.5	0	83	974	0.6	90	50	0.0
40	11/04/04 03:52	-10.1	-6.7	-3.3	-4.0	-2.2	-0.7	1.4	4.6	-	-	-	-	-	-	-	-
41	11/04/04 04:14	-1.8	0.2	6.8	6.8	1.8	2.7	0.5	1.4	-6.3	118	89	956	3.3	217	12	0.0
42	11/04/04 04:34	-1.8	0.3	1.1	1.2	1.1	2.7	0.5	1.4	-0.2	14	89	956	1.4	232	9	0.0
43	11/04/04 04:51	-2.2	-0.8	0.1	0.1	0.8	1.7	0.5	1.4	0.1	0	90	956	1.4	214	50	0.0
44	11/04/04 05:13	-2.8	-0.7	0.1	0.2	0.1	2.0	0.5	1.8	-0.1	0	94	956	1.0	274	-	0.0
45	11/04/04 05:38	-2.3	-0.8	0.1	0.1	1.0	1.9	0.6	1.8	-0.3	134	81	956	4.8	344	-	0.0
46	11/04/04 05:48	-4.3	-2.8	1.0	0.8	0.5	3.8	1.2	3.9	-3.1	483	48	942	4.2	324	-	0.0
47	11/04/04 06:19	-15.4	-13.1	-11.0	-11.2	-8.4	-8.8	1.2	3.7	-12.6	0	41	970	4.2	0	50	0.0
48	11/04/04 06:34	1.1	4.7	8.0	8.1	10.7	13.1	1.8	6.1	-9.4	720	44	973	4.3	349	50	0.0
49	11/04/04 06:52	-7.7	-3.7	4.4	5.4	4.3	11.4	3.8	12.1	-1.2	248	40	973	5.8	354	50	0.0
50	11/04/04 07:02	-11.4	-8.5	-2.2	-3.3	-3.7	7.0	5.7	15.9	-10.0	19	47	974	6.3	321	50	0.0
51	11/04/04 07:21	-7.2	-5.8	-4.4	-4.0	0.8	10.9	3.7	12.2	-11.2	486	41	973	1.4	350	50	0.0
52	11/04/04 07:42	-6.1	-2.7	4.0	4.1	9.4	13.4	3.4	8.3	-8.0	535	42	973	1.5	295	50	0.0
53	11/04/04 08:03	-9.7	1.1	6.8	6.2	5.8	17.0	2.7	2.1	-2.4	558	38	949	1.7	229	50	0.0
54	11/04/04 08:19	-3.1	-1.4	-0.4	-0.4	0.5	1.3	0.7	2.1	-2.5	70	39	949	0.4	239	50	0.0
55	11/04/04 08:47	-7.9	-4.8	-5.3	-5.0	-3.2	-3.4	0.4	1.8	-4.5	7	72	955	2.3	34	50	0.0
56	11/04/04 09:14	-4.4	-2.8	-4.1	-4.1	-3.1	-2.0	0.6	1.9	-4.4	18	75	962	2.2	332	50	0.0
57	11/04/04 09:24	-12.3	-11.8	-10.7	-10.5	-9.1	-7.7	0.8	2.7	-12.8	0	65	964	1.6	317	50	0.0
58	11/04/04 09:42	-22.1	-19.2	-17.2	-17.2	-16.3	-14.2	1.4	4.4	-17.0	0	76	967	0.8	90	50	0.0
59	11/04/04 10:13	-23.3	-21.8	-19.4	-19.2	-18.3	-11.2	1.2	4.4	-17.0	0	79	967	0.8	90	50	0.0
60	11/04/04 10:44	-14.9	-13.4	-11.2	-11.2	-10.4	-7.5	1.6	2.9	1.2	437	38	968	4.0	323	50	0.0
61	11/04/04 11:04	-18.9	-16.5	-14.4	-14.4	-13.4	-5.2	2.5	7.8	-16.7	0	40	968	3.1	300	50	0.0
62	11/04/04 11:25	1.1	2.2	2.7	3.2	3.2	7.3	1.0	3.0	-6.5	113	34	971	1.6	12	50	0.0
63	11/04/04 11:48	-2.3	-0.8	0.1	0.1	-0.1	2.0	0.6	1.8	-0.1	0	40	968	2.8	157	50	0.0
64	11/04/04 12:07	-1.4	-0.4	-0.1	0.2	0.1	1.8	0.5	1.5	-0.1	0	40	967	1.6	137	50	0.0
65	11/04/04 12:29	-2.8	-0.7	0.1	0.1	0.8	1.8	0.5	1.5	-1.1	1	94	968	1.4	130	4	0.0
66	11/04/04 12:51	-6.1	-4.3	-1.9	-2.2	-1.0	0.5	1.0	3.3	-3.8	0	95	964	1.1	41	2	0.0
67	11/04/04 13:15	-4.9	-4.0	-1.9	-2.0	-0.7	0.3	1.0	3.3	-3.2	0	92	965	0.5	199	5	0.0
68	11/04/04 13:25	-4.9	-4.0	-2.3	-2.3	-0.7	0.3	1.0	3.3	-3.2	0	92	965	0.5	199	42	0.0

GRAYLING II, BARE SOIL (SANDY) FEATURE, SWB DATA

## GRAYLING II, GRASS FEATURE, LWB DATA

WAVEBAND	MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE, No. (Deg. C)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND DIRECTION (DEGREES)	WIND VELOCITY (KTS)	PRECIPITATION (MM/HR)
LWB	119	02Apr84:12:20	-5.2	-6.7	-4.4	-4.3	-4.5	-3.9	-3.3	0.3	0.4	-0.3	989	5.0	339	0.00
LWB	120	02Apr84:12:40	-5.9	-5.4	-5.1	-4.9	-4.9	-4.4	-3.0	0.3	1.0	0.4	989	4.2	345	0.00
LWB	121	02Apr84:13:07	-7.7	-7.0	-6.7	-6.6	-6.7	-6.1	-5.4	0.3	0.9	0.2	972	1.4	339	0.00
LWB	122	02Apr84:13:36	-3.5	-2.5	-1.8	-1.7	-1.8	-1.0	-0.3	0.4	1.4	0.1	972	3.2	294	0.00
LWB	126	02Apr84:15:22	-6.4	-5.4	-4.4	-4.3	-4.5	-3.4	-2.5	0.6	1.9	-0.3	972	0.9	261	0.00
LWB	125	02Apr84:15:48	-12.2	-11.2	-10.3	-10.3	-10.3	-9.1	-7.5	0.6	2.1	0.3	971	0.0	219	0.00
LWB	126	02Apr84:16:24	-6.1	-5.6	-5.3	-5.2	-5.3	-4.7	-4.3	0.2	0.8	0.4	971	1.3	202	0.00
LWB	127	02Apr84:16:54	4.4	5.4	5.8	6.0	6.0	7.0	7.7	0.5	1.7	0.5	970	2.5	213	0.00
LWB	128	02Apr84:17:26	6.8	7.8	8.2	8.2	8.1	8.5	8.9	0.2	0.7	-0.5	967	5.1	219	0.00
LWB	129	02Apr84:18:05	-4.4	-3.7	-3.4	-3.3	-3.4	-2.9	-2.4	0.3	0.6	0.1	967	-	-	0.00
LWB	130	02Apr84:18:28	-5.1	-2.5	-2.3	-2.1	-2.2	-1.7	-1.3	0.2	0.8	-0.3	972	3.2	250	0.00
LWB	131	02Apr84:18:45	-4.7	-4.3	-3.8	-3.6	-3.9	-3.3	-2.9	0.3	0.9	0.3	973	2.4	264	0.00
LWB	132	02Apr84:19:20	-3.8	-4.4	-4.1	-3.9	-4.0	-3.4	-2.6	0.3	0.9	0.2	973	1.9	7	0.00
LWB	133	02Apr84:19:59	-3.3	-2.2	-1.6	-1.4	-1.4	-0.8	1.3	0.4	1.4	0.2	976	4.5	35	0.00
LWB	135	02Apr84:19:59	-8.2	-1.8	-1.7	-1.6	-1.6	-0.8	9.6	1.5	5.0	0.4	976	3.2	31	0.00
LWB	136	02Apr84:19:59	-2.8	-1.6	-1.3	-1.0	-1.0	-0.1	1.1	0.5	1.5	0.4	976	4.7	31	0.00
LWB	137	02Apr84:19:59	-4.7	-3.7	-3.1	-3.0	-3.1	-2.3	-1.6	0.4	1.5	0.1	976	3.0	31	0.00
LWB	138	02Apr84:19:59	-1.3	0.1	2.0	1.8	1.4	3.3	5.7	1.0	3.2	0.1	982	0.7	290	0.00
LWB	140	02Apr84:19:59	-9.2	-8.1	-6.5	-6.3	-6.4	-4.7	-4.9	0.9	3.0	-0.0	982	1.4	2	0.00
LWB	143	13Apr84:13:56	6.0	6.6	6.9	7.0	6.9	7.3	7.7	0.2	0.7	-0.4	984	0.2	307	0.00
LWB	145	13Apr84:14:26	4.4	4.9	5.1	5.2	5.1	5.5	5.9	0.2	0.7	-0.4	984	0.2	307	0.00
LWB	146	13Apr84:14:55	3.3	4.0	4.2	4.2	4.2	4.4	4.9	0.2	0.4	0.5	984	1.4	32	0.00
LWB	148	13Apr84:15:33	99.9	21.0	22.0	22.6	22.4	26.0	25.9	0.9	3.4	0.2	984	1.4	326	0.00
LWB	149	13Apr84:16:23	5.9	6.6	7.0	7.0	6.9	7.4	8.0	0.3	0.9	0.5	984	1.3	345	0.00
LWB	170	15Apr84:10:24	9.3	9.0	10.0	10.1	10.0	10.4	10.6	0.2	0.4	0.3	989	2.8	136	0.00
LWB	171	15Apr84:10:57	9.5	10.1	10.3	10.4	10.4	10.8	11.2	0.2	0.4	-0.2	989	2.9	100	0.00
LWB	172	15Apr84:14:16	12.4	12.0	12.9	13.0	12.9	13.3	13.5	0.2	0.3	0.5	984	3.7	195	0.00

## GRAYLING II, GRASS FEATURE, LWB DATA

MISSION NUMBER	MISSION DATE-TIME	MINIMUM TEMPERATURE (deg. C)	5-PERCENTILE TEMPERATURE (deg. C)	MEAN TEMPERATURE (deg. C)	95-PERCENTILE TEMPERATURE (deg. C)	MAXIMUM TEMPERATURE (deg. C)	STANDARD DEVIATION (deg. C)	WIND SPEED (deg. C)	WIND DIRECTION (DEGREES)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (KNOTS)	WIND DIRECTION (DEGREES)	VISIBILITY (KNOTS)	PRECIPITATION (MM)
LWB	210000H:23:29	-10.8	-9.2	-7.4	-6.0	-5.1	0.9	3.2	-1.0	92	965	0.0	90	14	0.00
LWB	210000H:05:36	-11.8	-9.5	-8.4	-7.4	-6.2	0.7	2.2	-0.3	95	965	0.0	90	50	0.00
LWB	210000H:11:51	0.5	3.7	8.1	10.1	11.2	1.9	4.7	-0.8	36	964	6.9	242	50	0.00
LWB	210000H:14:15	0.2	4.9	11.0	14.4	16.4	2.2	7.0	-1.2	40	962	5.1	223	50	0.00
LWB	210000H:20:38	-2.5	-0.7	0.4	1.3	2.9	0.6	2.0	-0.4	56	962	1.1	220	50	0.00
LWB	210000H:14:28	4.2	9.4	11.0	12.7	14.0	1.1	3.3	-0.1	40	962	2.2	70	50	0.00
LWB	210000H:19:04	1.1	3.4	2.4	3.1	3.7	0.4	1.3	-0.4	52	965	2.2	75	50	0.00
LWB	210000H:22:10	-1.4	-0.9	-0.7	-0.2	0.2	0.2	0.7	0.5	70	965	1.5	57	50	0.00
LWB	210000H:09:11	-0.2	0.4	0.4	0.8	1.3	0.2	0.4	0.7	93	972	1.9	247	4	0.00
LWB	210000H:14:47	-0.9	-0.4	0.0	0.5	0.9	0.3	0.7	-0.4	80	962	4.6	256	0	0.00
LWB	210000H:21:54	-0.6	-0.1	-0.9	-0.4	-0.8	0.2	0.8	-0.1	72	972	4.6	216	50	0.00
LWB	210000H:22:04	-0.8	-0.3	-0.9	-0.4	-0.9	0.3	0.9	0.8	73	972	3.4	207	50	0.00
LWB	210000H:08:17	-7.9	-7.3	-6.9	-6.3	-5.4	0.3	1.0	0.2	70	976	4.3	325	50	0.00
LWB	210000H:09:15	-3.3	-1.4	-0.8	-0.2	1.4	0.4	1.8	0.2	43	977	4.4	337	50	0.00
LWB	210000H:20:25	-10.4	-9.4	-8.3	-7.0	-5.7	0.7	2.4	0.2	50	978	1.2	357	50	0.00
LWB	210000H:23:43	-13.6	-12.6	-11.4	-10.2	-8.6	0.7	2.3	0.3	85	979	0.9	90	50	0.00
LWB	210000H:07:52	-4.7	-3.7	-3.3	-2.3	-1.6	0.3	1.0	0.1	75	975	0.5	170	50	0.00
LWB	210000H:10:51	3.0	5.5	6.7	8.1	9.5	0.8	2.6	-0.1	49	975	4.4	206	50	0.00
LWB	210000H:18:44	-1.0	-1.2	-0.9	-0.9	-0.9	0.3	0.9	0.0	80	967	0.7	126	13	0.00
LWB	210000H:08:07	-4.1	-3.5	-3.2	-2.9	-2.7	0.2	0.6	-0.6	96	967	3.0	259	0	0.00
LWB	210000H:15:22	2.5	3.3	3.9	3.8	4.4	0.3	1.1	-0.4	44	969	3.7	209	50	0.00
LWB	210000H:19:34	-0.4	-0.2	-0.0	-0.1	-0.4	0.7	2.2	-0.0	81	970	0.0	90	50	0.00
LWB	210000H:05:15	-7.3	-6.4	-6.1	-5.5	-4.8	0.3	1.1	0.0	81	973	0.0	90	5	0.00
LWB	210000H:20:57	-0.5	-0.5	-0.4	-0.4	-0.4	0.6	1.9	-0.3	80	980	0.7	11	10	0.00
LWB	210000H:21:59	-0.9	-0.8	-0.4	-0.3	-0.1	0.7	2.4	0.2	92	981	0.5	37	14	0.00
LWB	210000H:22:11	-0.3	-0.1	-0.4	-0.5	-0.1	0.5	1.7	0.2	81	982	1.0	326	50	0.00
LWB	210000H:05:26	1.4	2.9	4.4	4.3	4.0	0.9	3.1	0.2	54	984	4.3	304	50	0.00
LWB	210000H:11:20	1.4	2.9	4.4	4.3	4.0	0.9	3.1	0.2	47	982	2.0	281	50	0.00
LWB	210000H:14:21	2.2	3.8	4.3	4.3	4.3	0.8	2.5	0.5	56	981	2.0	286	50	0.00
LWB	210000H:18:43	-5.7	-4.3	-3.9	-3.3	-2.9	0.3	1.0	0.1	90	977	0.0	00	16	0.00
LWB	210000H:04:16	-13.5	-12.3	-11.1	-10.0	-8.4	0.7	2.2	0.1	90	977	0.0	00	16	0.00
LWB	210000H:08:29	-12.2	-11.2	-10.4	-9.5	-8.4	0.5	1.7	-0.1	49	975	0.5	232	14	0.00
LWB	210000H:14:29	5.0	6.8	7.7	7.4	8.0	0.3	0.9	0.1	34	971	3.3	254	50	0.00
LWB	210000H:16:56	6.8	7.4	7.7	7.8	8.3	0.3	0.9	0.1	46	971	0.9	209	50	0.00
LWB	210000H:18:07	-7.9	-7.0	-6.1	-5.2	-4.1	0.5	1.8	0.3	80	971	0.0	90	15	0.00
LWB	210000H:02:27	-10.9	-9.7	-8.6	-7.5	-6.9	0.7	2.3	0.4	47	971	0.5	26	15	0.00
LWB	210000H:04:12	-11.0	-9.4	-8.0	-7.2	-6.5	0.6	2.0	0.4	47	971	0.5	26	15	0.00
LWB	210000H:08:16	-5.5	-4.7	-4.0	-3.3	-2.5	0.4	1.5	0.2	51	972	1.3	131	50	0.00
LWB	210000H:09:07	-4.6	-3.8	-3.3	-2.7	-2.4	0.3	1.1	-0.1	44	968	2.0	311	50	0.00
LWB	210000H:20:25	-4.9	-4.3	-3.8	-3.3	-2.8	0.3	0.9	-0.2	44	968	2.0	311	50	0.00



# GRAYLING II, GRASS FEATURE, SWB DATA

MISSION NUMBER	DATE-TIME	MISSION	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MODIM TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	BLAZE-WO WEARNESS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	POLARITY (PERCENT)	WIND SPEED (MILES/HOUR)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (MM)
346	119	02/09/84 12:20	-5.0	-3.7	-3.0	-3.1	-2.2	-1.6	0.5	1.5	-3.9	0	72	5.0	139	50	0.00
346	120	02/09/84 12:31	-5.5	-4.3	-3.4	-3.6	-2.6	-1.6	0.5	1.7	-4.6	0	76	5.4	137	50	0.00
346	121	02/09/84 12:41	-7.4	-6.1	-5.5	-5.3	-4.4	-3.4	0.5	1.7	-6.2	0	80	5.6	139	5	0.00
346	122	02/09/84 14:07	16.2	16.9	16.7	16.8	20.7	23.4	1.1	3.7	-0.3	770	35	3.2	204	50	0.00
346	123	02/09/84 16:30	-1.9	-0.2	0.7	0.8	1.7	3.2	0.6	1.9	-0.3	26	34	3.8	202	50	0.00
346	124	02/09/84 19:22	-5.5	-3.8	-2.7	-2.6	-1.5	-0.1	0.7	2.4	-0.2	0	36	3.9	201	50	0.00
346	125	02/09/84 02:10	-11.0	-9.9	-7.7	-7.7	-6.6	-4.9	0.7	2.3	-6.5	0	75	3.9	209	50	0.00
346	126	02/09/84 04:56	-5.2	-4.8	-3.3	-3.3	-2.3	-1.1	0.5	1.7	-6.0	0	75	3.9	209	50	0.00
346	127	02/09/84 09:54	5.7	7.1	7.8	8.0	9.2	9.9	0.4	1.4	-0.1	241	44	3.2	202	50	0.00
346	128	02/09/84 13:28	6.5	7.8	8.4	8.5	9.2	9.8	0.4	1.4	-0.1	241	44	3.2	202	50	0.00
346	129	02/09/84 18:05	-4.1	-2.9	-2.0	-2.2	-1.1	-0.2	0.5	1.8	-0.2	115	36	3.6	207	50	0.00
346	130	02/09/84 13:28	-2.6	-1.5	-0.6	-0.7	0.3	1.2	0.5	1.8	-0.1	326	41	3.2	209	50	0.00
346	131	02/09/84 17:45	-4.4	-3.0	-2.3	-2.2	-1.2	-0.2	0.5	1.8	-0.2	90	75	3.2	204	50	0.00
346	132	02/09/84 18:20	-4.4	-3.4	-2.6	-2.6	-1.6	-0.6	0.6	1.8	-0.3	43	75	3.2	204	50	0.00
346	133	02/09/84 18:19	1.2	3.1	4.1	4.5	4.8	5.0	0.9	3.8	0.1	467	47	3.2	204	50	0.00
346	134	02/09/84 16:26	4.0	7.5	10.1	10.0	14.3	17.2	2.0	6.8	-0.8	695	40	3.2	204	50	0.00
346	135	02/09/84 17:35	0.1	1.4	2.3	2.5	3.4	4.5	0.6	2.0	-0.9	179	45	3.2	204	50	0.00
346	137	02/09/84 09:12	-0.1	2.7	4.4	4.3	5.5	6.7	0.8	2.8	-0.4	310	40	3.2	204	50	0.00
346	138	02/09/84 18:21	-0.2	1.9	7.0	6.2	8.9	11.6	2.4	6.9	-0.5	101	36	3.2	202	50	0.00
346	139	02/09/84 18:17	-7.0	-5.3	-4.1	-4.0	-3.0	-2.2	0.9	2.9	-6.5	0	78	3.6	207	50	0.00
346	140	02/09/84 13:56	5.7	6.8	7.4	7.5	8.2	9.0	0.4	1.4	-0.1	47	90	3.2	209	50	0.00
346	141	02/09/84 14:56	5.1	6.3	6.9	6.9	7.7	8.9	0.5	1.4	-0.1	47	90	3.2	209	50	0.00
346	142	02/09/84 18:08	3.5	4.5	5.1	5.2	5.8	6.4	0.4	1.4	-0.1	47	90	3.2	209	50	0.00
346	143	02/09/84 18:14	2.9	3.9	3.7	3.8	4.4	5.2	0.4	1.5	-0.1	47	90	3.2	209	50	0.00
346	144	02/09/84 16:23	25.8	28.8	28.4	28.8	28.8	29.4	0.7	2.1	0.4	434	31	3.2	204	50	0.00
346	149	02/09/84 16:23	4.5	7.5	6.1	6.1	8.8	9.4	0.4	1.3	-0.1	0	75	3.2	204	50	0.00
346	170	02/09/84 18:25	9.4	10.7	11.2	11.4	11.9	12.4	0.3	1.2	-0.4	5	40	3.2	204	50	0.00
346	171	02/09/84 18:17	10.2	11.0	11.4	11.5	12.2	12.8	0.4	1.2	-0.2	4	79	3.2	204	50	0.00
346	172	02/09/84 14:16	12.2	12.9	13.4	13.5	14.0	14.6	0.3	1.1	-0.3	55	96	3.2	204	50	0.00



STATION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	WIND SPEED (Deg. C)	WIND DIRECTION (Deg. C)	RELATIVE HUMIDITY (PERCENT)	SOUNDING PRESSURE (HLL (INCHES))	WIND SPEED (KNOTS)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (MM)
29	170000:13:30	-12.0	-9.5	-8.7	-7.2	-5.2	0.8	2.5	0.2	-7.9	983	1.1	355	50	0.00
30	170000:13:35	0.3	3.0	8.5	7.7	15.5	2.0	8.3	-0.4	-2.4	987	0.7	81	50	0.00
31	170000:13:40	0.5	3.0	10.2	9.8	16.5	3.1	9.4	-0.9	-	-	-	-	50	0.00
32	170000:13:45	-0.8	-4.6	-5.2	-5.8	-4.3	0.7	2.3	0.1	-3.0	-	-	-	50	0.00
33	170000:13:50	-11.5	-9.1	-8.9	-7.7	-5.8	0.7	2.4	-0.1	-9.8	986	0.4	53	50	0.00
34	170000:13:55	-7.7	-4.8	-5.8	-4.7	-3.4	0.6	1.8	0.1	-8.0	986	0.2	230	50	0.00
35	170000:14:00	-2.6	-0.1	-0.2	0.7	1.4	0.5	1.7	-0.6	-2.4	986	0.2	230	50	0.00
36	170000:14:05	-2.2	-0.2	-0.1	0.6	1.3	0.5	1.3	-0.1	-0.7	986	1.9	190	50	0.00
37	170000:14:10	-4.9	-3.5	-2.9	-1.9	1.0	0.5	1.5	0.4	-2.7	986	1.2	207	5	0.00
38	170000:14:15	2.2	4.5	11.4	9.7	12.4	2.5	4.0	-1.0	3.0	986	0.8	202	2	0.00
39	170000:14:20	-5.8	-4.3	-3.3	-2.2	-1.1	0.6	2.1	0.1	-2.7	986	0.9	175	50	0.00
40	170000:14:25	-10.1	-7.9	-6.7	-5.3	-4.0	0.8	2.5	0.1	-	974	0.8	98	50	0.00
41	170000:14:30	-1.1	0.1	0.6	1.7	2.5	0.5	1.4	0.1	-0.1	982	-	-	-	-
42	170000:14:35	-1.2	0.5	1.1	2.0	2.9	0.5	1.4	-0.0	0.5	982	2.5	232	9	0.00
43	170000:14:40	-2.3	-1.1	-0.3	0.5	1.3	0.5	1.5	0.0	0.2	984	1.4	232	50	0.00
44	170000:14:45	-1.8	-0.6	0.1	1.8	3.0	0.5	1.5	0.0	-0.3	984	0.9	209	-	0.00
45	170000:14:50	-2.8	-0.8	0.1	0.8	3.0	0.5	1.4	-0.4	-2.1	984	2.7	306	-	0.00
46	170000:14:55	-3.0	-1.2	1.1	2.2	3.1	1.0	3.4	-0.9	-12.8	982	4.0	340	-	0.00
47	170000:15:00	-16.1	-12.2	-12.9	-11.8	-10.1	0.8	2.4	-0.3	-12.8	979	4.1	352	50	0.00
48	170000:15:05	-6.5	-2.6	1.2	3.9	9.3	3.2	8.9	0.2	-9.9	979	6.9	333	50	0.00
49	170000:15:10	-6.7	-4.4	4.1	3.5	7.3	1.9	6.5	-2.0	-9.9	973	3.5	332	50	0.00
50	170000:15:15	-12.7	-9.5	-9.1	-8.8	-3.6	1.2	3.9	1.1	-10.8	973	4.2	314	50	0.00
51	170000:15:20	-4.4	-2.4	2.0	3.8	4.0	1.4	4.4	-0.8	-10.9	973	4.2	314	50	0.00
52	170000:15:25	-2.9	1.0	3.2	4.9	12.4	2.6	7.9	-1.1	-6.1	973	3.5	323	50	0.00
53	170000:15:30	-6.4	1.4	6.3	9.4	12.4	2.6	7.9	-0.5	-2.3	973	3.5	323	50	0.00
54	170000:15:35	-3.4	-2.2	-1.0	-0.2	6.8	0.6	2.0	-0.4	-2.5	969	3.4	290	50	0.00
55	170000:15:40	-7.4	-6.1	-5.3	-4.3	-3.3	0.6	1.9	-0.3	-6.8	966	0.5	219	50	0.00
56	170000:15:45	-6.8	-5.2	-4.3	-3.3	-2.0	0.6	1.9	0.2	-4.5	965	1.0	55	0	0.00
57	170000:15:50	-11.2	-9.6	-8.5	-7.2	-5.3	0.7	2.4	0.2	-5.2	963	4.4	325	50	0.00
58	170000:15:55	-16.4	-12.6	-11.2	-9.6	-6.1	0.9	3.0	0.5	-6.4	964	2.5	295	50	0.00
59	170000:16:00	-23.2	-21.0	-19.7	-17.7	-15.4	1.0	3.3	0.2	-13.4	964	1.9	317	40	0.00
60	170000:16:05	-25.4	-22.4	-20.7	-18.9	-16.3	1.0	4.7	2.4	-17.1	967	0.0	90	50	0.00
61	170000:16:10	-0.1	1.3	2.2	3.1	4.0	0.9	2.8	0.5	0.1	967	0.0	90	50	0.00
62	170000:16:15	-9.9	-7.1	-5.8	-4.3	-3.4	0.9	2.8	0.5	0.1	967	0.0	90	50	0.00
63	170000:16:20	-19.2	-16.1	-14.8	-13.1	-10.5	1.0	2.9	-0.1	-16.7	971	0.0	12	50	0.00
64	170000:16:25	-1.6	2.7	4.0	5.4	7.1	0.9	2.9	0.1	-6.5	968	3.7	334	50	0.00
65	170000:16:30	-1.6	0.3	0.2	1.2	2.4	0.5	1.4	0.2	-0.1	967	2.0	290	50	0.00
66	170000:16:35	-2.8	-0.8	-0.2	0.8	1.7	0.5	1.4	0.2	-1.0	967	2.3	134	50	0.00
67	170000:16:40	-2.2	-0.8	-0.2	0.7	1.4	0.5	1.5	-0.4	-1.1	968	1.0	123	5	0.00
68	170000:16:45	-7.7	-5.8	-4.4	-2.9	-1.6	0.9	2.9	-0.1	-3.7	964	0.4	200	5	0.00

GRAYLING II, GRASS FEATURE, SWB DATA



GRAYLING II, SNOW OR/AND GRASS FEATURE, LWB DATA

STATION NUMBER	DIVISION	DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE (Deg. C)	WINDSPEED (km/h)	AIR TEMPERATURE (Deg. C)	WIND DIRECTION (degT)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (milibars)	WIND SPEED (m/s)	WIND DIRECTION (degrees)	WIND LIFT (cm)	PRECIPITATION (mm)
L08	72	200004-23:29	-12.3	-11.4	-10.5	-9.7	-8.5	1.2	4.2	1.7	-3.5	0	92	965	0.4	90	14	0.00
L08	73	200004-23:36	-15.0	-13.6	-12.4	-11.0	-9.4	1.5	4.9	1.8	-7.2	0	92	965	0.4	90	14	0.00
L08	74	200004-23:43	0.4	1.0	1.6	2.2	2.8	1.1	3.2	2.4	18.5	737	30	964	0.4	90	14	0.00
L08	75	200004-23:50	-2.4	0.0	1.6	3.2	4.8	1.4	4.7	1.8	11.8	686	34	962	5.1	283	50	0.00
L08	76	200004-24:00	-2.8	-2.1	-1.4	-0.7	0.0	1.4	3.1	1.3	4.2	0	94	962	1.1	280	50	0.00
L08	77	200004-24:09	0.0	0.9	1.3	2.2	3.1	0.9	2.2	0.9	8.9	480	42	965	2.2	76	50	0.00
L08	78	200004-24:16	-1.5	-0.7	-0.2	0.4	1.1	2.2	2.8	0.7	4.0	0	52	965	2.2	75	50	0.00
L08	79	200004-24:21	-2.2	-1.4	-1.1	-0.8	0.0	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	80	200004-24:27	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.9	37	95	957	1.9	267	0	0.00
L08	81	200004-24:34	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	82	200004-24:41	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	83	200004-24:48	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	84	200004-24:55	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	85	200004-25:02	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	86	200004-25:09	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	87	200004-25:16	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	88	200004-25:23	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	89	200004-25:30	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	90	200004-25:37	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	91	200004-25:44	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	92	200004-25:51	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	93	200004-25:58	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	94	200004-26:05	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	95	200004-26:12	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	96	200004-26:19	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	97	200004-26:26	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	98	200004-26:33	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	99	200004-26:40	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	100	200004-26:47	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	101	200004-26:54	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	102	200004-27:01	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	103	200004-27:08	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	104	200004-27:15	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	105	200004-27:22	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	106	200004-27:29	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	107	200004-27:36	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	108	200004-27:43	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	109	200004-27:50	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	110	200004-27:57	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	111	200004-28:04	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	112	200004-28:11	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	113	200004-28:18	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	114	200004-28:25	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	115	200004-28:32	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	116	200004-28:39	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	117	200004-28:46	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00
L08	118	200004-28:53	-2.5	-1.6	-0.9	-0.3	0.8	0.5	1.5	0.3	8.7	0	76	965	1.5	57	50	0.00

# GRAYLING II, SNOW OR/AND GRASS FEATURE, LWB DATA

MISSION NUMBER	MISSION NAME	MISSION TIME	MEAN TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE (Deg. C)	SUNGLASS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	MAGNETIC FIELD (GAUSS)	WIND SPEED (KNOTS)	WIND DIRECTION (DEGREES)	VISUAL RANGE (MILES)	PROJECTILE SIZE (MM)	
100	020904-22:20		-5.3	-6.5	-6.1	-6.0	-6.1	-3.5	-2.6	0.3	1.0	-0.1	-3.9	0	72	960	5.0	330	50	0.00	
100	020904-22:10		-6.3	-5.5	-5.0	-5.0	-5.0	-4.4	-3.4	0.4	1.1	-0.2	-4.4	0	75	970	4.2	330	50	0.00	
100	020904-22:17		-6.3	-7.1	-6.5	-6.4	-5.7	-5.7	-5.0	0.4	1.4	0.0	-6.2	0	80	972	1.4	330	50	0.00	
100	020904-22:07		6.9	8.9	11.1	11.3	14.0	14.0	14.1	1.5	5.1	0.2	3.1	770	25	972	3.1	284	50	0.00	
100	020904-22:00		-2.0	-1.5	-1.0	-1.1	-0.9	-0.8	-0.8	1.1	0.4	1.5	0.5	2.4	26	34	972	1.8	284	50	0.00
100	020904-22:00		-6.0	-6.4	-6.1	-5.9	-5.0	-3.0	-2.0	0.5	1.0	0.2	0.1	0	36	972	0.9	284	50	0.00	
100	020904-22:00		-13.0	-10.3	-9.2	-9.0	-7.2	-5.3	-3.3	1.0	3.2	0.3	-6.5	0	75	971	0.8	284	50	0.00	
100	020904-22:00		-6.5	-5.6	-5.0	-4.9	-3.0	-1.3	-0.3	0.4	1.5	-0.0	-5.7	25	65	971	1.3	284	50	0.00	
100	020904-22:00		2.2	4.2	5.0	5.4	5.5	6.7	7.6	0.0	2.5	-0.5	4.4	241	45	970	2.5	222	50	0.00	
100	020904-22:00		4.0	6.5	7.4	7.5	7.4	8.2	8.6	0.4	1.7	-1.0	0.3	115	34	967	5.1	219	50	0.00	
100	020904-22:00		-4.4	-3.9	-3.3	-3.3	-3.4	-3.0	-2.5	0.3	0.9	-0.4	-3.4	0	95	967	-	-	5	0.00	
100	020904-22:00		-3.0	-2.9	-2.3	-2.3	-2.4	-1.7	-0.0	0.4	1.2	-0.4	-2.0	326	81	972	3.2	309	50	0.00	
100	020904-22:00		-5.3	-6.5	-6.1	-5.9	-4.0	-3.3	-2.5	0.4	1.2	-0.2	-2.0	90	75	973	2.4	304	50	0.00	
100	020904-22:00		-5.7	-6.9	-6.4	-6.3	-4.4	-3.7	-3.0	0.3	1.2	-0.2	-3.1	43	75	973	1.9	7	50	0.00	
100	020904-22:00		-4.5	-3.0	-2.2	-1.9	-2.0	-0.8	1.2	0.7	2.2	0.1	-3.9	407	47	976	1.9	43	50	0.00	
100	020904-22:00		-3.3	-2.2	-1.4	-1.4	-1.5	-0.4	1.4	0.4	1.0	0.4	-2.5	407	40	976	4.5	35	50	0.00	
100	020904-22:00		-2.3	2.1	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	-0.3	643	47	976	3.2	31	50	0.00	
100	020904-22:00		-4.6	-6.9	-6.3	-6.2	-4.3	-2.0	-0.2	0.9	2.4	0.4	-0.9	179	45	976	3.0	31	50	0.00	
100	020904-22:00		-2.5	-5.1	-3.7	-3.4	-2.4	-1.7	-0.8	1.0	3.1	0.1	-7.2	310	49	982	0.7	290	50	0.00	
100	020904-22:00		-0.4	1.3	1.8	2.4	2.4	3.8	5.8	1.3	3.7	0.1	3.9	301	34	980	1.4	2	50	0.00	
100	020904-22:00		-0.4	-0.4	-0.9	-0.7	-0.7	-0.7	-0.9	1.1	3.7	0.1	0.5	0	32	980	0.2	207	50	0.00	
100	020904-22:00		-11.0	-9.3	-7.2	-7.4	-6.0	-4.0	-3.3	0.3	1.0	-0.4	-4.4	0	70	986	0.7	36	50	0.00	
100	020904-22:00		5.0	6.0	7.4	7.4	7.3	7.8	8.3	0.3	1.0	0.2	3.4	47	90	987	1.4	209	50	0.00	
100	020904-22:00		3.9	4.4	5.1	5.2	5.0	5.4	6.0	0.2	0.8	-0.1	5.4	49	91	987	2.7	229	50	0.00	
100	020904-22:00		3.1	3.7	4.1	4.1	4.0	4.5	4.8	0.2	0.8	-0.1	4.4	0	90	980	1.3	229	50	0.00	
100	020904-22:00		-0.1	0.7	1.2	1.3	1.2	1.9	2.6	0.4	1.2	0.1	4.4	0	91	984	1.4	226	50	0.00	
100	020904-22:00		20.4	22.0	26.1	26.3	26.2	28.3	28.1	1.3	4.3	-0.0	19.3	444	31	983	3.1	250	50	0.00	
100	020904-22:00		5.2	6.0	6.5	6.7	6.6	7.2	7.9	0.4	1.2	-0.1	8.9	0	75	984	1.1	145	50	0.00	
100	020904-22:00		8.8	9.4	9.8	9.8	9.8	10.3	10.0	0.3	0.9	-0.1	10.5	5	80	980	2.0	156	11	0.00	
100	020904-22:00		8.0	9.5	10.0	10.0	10.0	10.5	11.2	0.3	1.0	0.4	11.4	4	79	980	2.9	160	17	0.00	
100	020904-22:00		11.9	12.5	13.0	13.0	12.9	13.3	13.6	0.2	0.7	-0.4	13.0	55	94	984	3.7	195	10	0.00	



STATION	TIME	IMAGE	MAXIMUM	5-PERCENTILE	MEAN	MODAL	95-PERCENTILE	MAXIMUM	STANDARD	ANNUAL	RELATIVE	ANNUAL	WIND	WIND	WIND	WIND	WIND
		FILE NAME	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	DEVIATION	PRECIPITATION	WINDSPEED	WINDSPEED	WINDSPEED	WINDSPEED	WINDSPEED	WINDSPEED	WINDSPEED
			(Deg. C)	(Deg. C)	(Deg. C)	(Deg. C)	(Deg. C)	(Deg. C)	(Deg. C)	(mm)	(m/s)	(m/s)	(m/s)	(m/s)	(m/s)	(m/s)	(m/s)
20	1/10/06	101120	-12.9	-11.8	-10.1	-9.9	-10.1	-7.5	0.6	2.1	-2.9	78	1.1	225	30	0.00	0.00
21	1/10/06	101121	8.2	2.2	3.0	3.0	4.1	4.4	0.6	2.0	-2.4	41	0.7	81	50	0.00	0.00
22	1/10/06	101122	-9.2	1.1	1.0	1.0	3.4	7.2	0.6	2.1	1.7	-	-	-	50	0.00	0.00
23	1/10/06	101123	-9.4	-0.9	-7.0	-6.9	-5.8	-5.1	0.7	2.2	-3.0	64	0.6	90	50	0.00	0.00
24	1/10/06	101124	-13.1	-11.2	-10.1	-10.1	-8.5	-6.6	0.8	2.7	-3.8	80	0.6	135	50	0.00	0.00
25	1/10/06	101125	-12.7	-11.5	-10.8	-10.7	-9.1	-6.8	0.5	1.6	-2.4	126	0.6	160	50	0.00	0.00
26	1/10/06	101126	-1.9	-0.7	-6.1	-6.1	-4.1	-1.7	0.5	1.5	-0.1	92	0.6	207	50	0.00	0.00
27	1/10/06	101127	-4.3	-3.0	-2.3	-2.3	-1.5	-0.6	0.5	1.5	-0.2	91	0.6	207	50	0.00	0.00
28	1/10/06	101128	-6.5	-4.9	-4.1	-4.1	-3.0	-2.0	0.6	1.9	-0.5	92	0.6	207	50	0.00	0.00
29	1/10/06	101129	8.7	1.9	2.5	2.7	5.2	10.4	1.7	3.2	-3.0	91	0.6	207	50	0.00	0.00
30	1/10/06	101130	-7.5	-6.0	-5.2	-5.2	-4.0	-3.0	0.6	2.0	-2.7	84	0.6	175	50	0.00	0.00
31	1/10/06	101131	-12.2	-10.1	-8.7	-8.7	-6.9	-4.7	1.0	3.2	-0.1	-	-	90	50	0.00	0.00
32	1/10/06	101132	-1.4	-0.1	0.7	0.7	1.4	2.4	0.5	1.5	0.0	87	0.6	220	50	0.00	0.00
33	1/10/06	101133	-1.4	0.1	0.7	0.8	1.4	2.7	0.5	1.5	-0.1	89	0.6	232	50	0.00	0.00
34	1/10/06	101134	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
35	1/10/06	101135	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
36	1/10/06	101136	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
37	1/10/06	101137	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
38	1/10/06	101138	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
39	1/10/06	101139	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
40	1/10/06	101140	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
41	1/10/06	101141	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
42	1/10/06	101142	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
43	1/10/06	101143	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
44	1/10/06	101144	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
45	1/10/06	101145	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
46	1/10/06	101146	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
47	1/10/06	101147	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
48	1/10/06	101148	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
49	1/10/06	101149	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
50	1/10/06	101150	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
51	1/10/06	101151	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
52	1/10/06	101152	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
53	1/10/06	101153	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
54	1/10/06	101154	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
55	1/10/06	101155	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
56	1/10/06	101156	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
57	1/10/06	101157	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
58	1/10/06	101158	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
59	1/10/06	101159	-2.0	-0.8	-0.1	-0.1	0.8	1.9	0.5	1.4	-0.2	80	0.6	235	50	0.00	0.00
60	1/10/06	101200	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
61	1/10/06	101201	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
62	1/10/06	101202	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
63	1/10/06	101203	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
64	1/10/06	101204	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
65	1/10/06	101205	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
66	1/10/06	101206	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
67	1/10/06	101207	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
68	1/10/06	101208	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
69	1/10/06	101209	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
70	1/10/06	101210	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
71	1/10/06	101211	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
72	1/10/06	101212	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
73	1/10/06	101213	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
74	1/10/06	101214	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
75	1/10/06	101215	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
76	1/10/06	101216	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
77	1/10/06	101217	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
78	1/10/06	101218	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
79	1/10/06	101219	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
80	1/10/06	101220	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
81	1/10/06	101221	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
82	1/10/06	101222	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
83	1/10/06	101223	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
84	1/10/06	101224	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
85	1/10/06	101225	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
86	1/10/06	101226	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
87	1/10/06	101227	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
88	1/10/06	101228	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
89	1/10/06	101229	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
90	1/10/06	101230	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
91	1/10/06	101231	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
92	1/10/06	101232	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
93	1/10/06	101233	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
94	1/10/06	101234	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7	2.5	-5.2	77	0.6	335	50	0.00	0.00
95	1/10/06	101235	-11.4	-11.4	-10.3	-10.3	-9.1	-7.7	0.7								

MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (deg. C)	5-PERCENTILE TEMPERATURE (deg. C)	MODE TEMPERATURE (deg. C)	MEDIAN TEMPERATURE (deg. C)	MEAN TEMPERATURE (deg. C)	75-PERCENTILE TEMPERATURE (deg. C)	MAXIMUM TEMPERATURE (deg. C)	STANDARD DEVIATION (deg. C)	RANGE, IN SECONDS (deg. C)	AIR TEMPERATURE (deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BARO-METRIC PRESSURE (MILLIBARS)	WIND SPEED (MPS)	WIND DIRECTION (DEGREES)	VISUAL LIMIT (KM)	PRECIP- ITATION (MM/H)
72	200009123129	-10.1	-7.9	-6.9	-6.7	-6.7	-3	-0.3	1.3	3.4	-3.4	0	92	945	0.0	89	14	0.00
73	200009123134	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
74	200009123139	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
75	200009123144	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
76	200009123149	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
77	200009123154	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
78	200009123159	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
79	200009123204	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
80	200009123209	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
81	200009123214	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
82	200009123219	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
83	200009123224	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
84	200009123229	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
85	200009123234	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
86	200009123239	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
87	200009123244	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
88	200009123249	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
89	200009123254	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
90	200009123259	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
91	200009123304	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
92	200009123309	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
93	200009123314	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
94	200009123319	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
95	200009123324	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
96	200009123329	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
97	200009123334	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
98	200009123339	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
99	200009123344	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
100	200009123349	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
101	200009123354	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
102	200009123359	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
103	200009123404	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
104	200009123409	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
105	200009123414	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
106	200009123419	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
107	200009123424	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
108	200009123429	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
109	200009123434	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
110	200009123439	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
111	200009123444	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
112	200009123449	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
113	200009123454	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
114	200009123459	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
115	200009123504	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
116	200009123509	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
117	200009123514	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00
118	200009123519	-11.8	-9.8	-8.9	-8.2	-7.9	-7.9	-1.6	1.5	4.9	-7.2	0	92	945	0.0	90	14	0.00

GRAYLING II, SNOW OR/AND GRASS FEATURE, SWB DATA

GRAYLING II, SNOW OR/AND GRASS FEATURE, SWB DATA

WATERWAY NUMBER	SECTION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 90 DEGREES (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	WIND LIFT (FEET)	PRECIPITATION (INCHES)
040	119	02APR04:22:26	-4.6	-3.4	-2.7	-2.6	-2.7	-1.8	-1.0	0.5	1.7	-3.9	0	72	949	5.0	339	50	0.00
040	120	02APR04:23:13	-5.0	-3.7	-2.9	-2.9	-3.0	-2.0	-0.7	0.5	1.7	-4.6	0	76	949	1.4	337	50	0.00
040	121	02APR04:10:17	-4.7	-3.5	-4.4	-4.4	-4.6	-3.6	-2.4	0.6	1.0	-4.2	0	80	972	1.6	319	5	0.00
040	122	02APR04:16:07	12.8	16.1	18.5	18.6	18.5	20.9	26.1	1.5	4.8	3.1	778	35	972	3.2	294	50	0.00
040	123	02APR04:18:38	-1.1	0.2	1.1	1.1	1.0	2.0	3.2	0.5	2.2	2.4	26	34	972	1.8	292	50	0.00
040	124	02APR04:19:22	-5.2	-3.3	-2.2	-2.2	-2.3	-1.1	0.5	0.7	2.2	0.1	0	36	972	0.9	261	50	0.00
040	125	02APR04:10:48	-9.8	-7.7	-6.6	-6.3	-6.4	-4.6	-2.9	0.9	3.1	-6.5	0	75	971	0.8	219	50	0.00
040	126	02APR04:10:50	-5.2	-3.6	-2.7	-2.6	-2.7	-1.6	-0.4	0.6	1.9	-5.7	25	85	971	1.3	202	50	0.00
040	127	02APR04:09:53	3.8	6.5	7.7	7.7	7.6	8.8	10.1	0.7	2.5	-0.6	261	45	970	2.5	222	50	0.00
040	128	02APR04:13:26	4.4	7.2	8.3	8.2	8.1	9.1	10.1	0.6	1.9	-0.7	115	34	967	5.1	219	50	0.00
040	129	02APR04:10:05	-6.4	-2.9	-2.2	-2.0	-2.2	-1.1	-0.2	0.5	1.8	0.1	0	93	967	-	-	3	0.00
040	130	02APR04:17:45	-2.7	-1.6	-0.4	-0.4	-0.7	0.5	1.3	0.5	1.7	-2.8	326	81	972	3.2	359	50	0.00
040	131	02APR04:17:45	-4.6	-3.0	-2.2	-2.2	-2.3	-1.2	-0.2	0.5	1.8	0.0	90	73	975	2.4	354	50	0.00
040	132	02APR04:18:28	-4.6	-3.4	-2.7	-2.6	-2.7	-1.6	-0.6	0.5	1.8	0.3	43	75	975	1.9	7	50	0.00
040	133	02APR04:18:19	-8.4	-2.7	4.9	5.2	5.1	7.5	10.0	1.5	4.7	-6.2	407	42	976	1.9	43	50	0.00
040	134	02APR04:14:04	2.3	7.1	11.3	11.4	11.4	15.2	19.3	2.5	8.1	-2.3	693	60	976	4.5	35	50	0.00
040	135	02APR04:17:05	9.3	2.2	3.1	3.3	3.3	5.0	8.0	0.9	2.8	-0.4	179	45	974	3.2	31	50	0.00
040	136	02APR04:17:05	-2.4	-0.4	0.5	1.8	2.0	5.4	8.8	1.9	5.9	-7.2	310	60	962	0.7	298	50	0.00
040	137	02APR04:18:27	2.6	5.4	7.3	7.5	7.5	9.9	16.0	1.4	4.5	3.9	101	34	963	1.4	2	50	0.00
040	138	02APR04:18:27	-6.6	-4.1	-3.0	-2.4	-2.6	-0.6	1.3	1.1	3.6	0.1	0	52	963	0.2	307	50	0.00
040	139	02APR04:18:17	-8.9	-6.0	-4.6	-4.3	-4.6	-2.6	-0.6	1.1	3.5	0.1	0	70	964	0.7	36	50	0.00
040	140	02APR04:13:56	6.0	7.2	7.8	8.0	7.9	8.7	9.4	0.4	1.5	-0.4	47	90	957	1.6	269	32	0.00
040	141	02APR04:14:06	5.1	6.4	7.0	7.2	7.1	7.9	8.9	0.5	1.5	-0.3	49	91	957	2.7	295	50	0.00
040	142	02APR04:10:05	3.4	4.7	5.2	5.3	5.2	6.0	7.1	0.4	1.3	-0.0	0	90	960	1.3	239	50	0.00
040	143	02APR04:10:42	1.6	2.7	3.5	3.5	3.4	4.4	5.2	0.5	1.7	0.1	0	91	961	1.8	236	6	0.00
040	144	02APR04:15:14	22.6	26.4	28.0	28.5	28.4	30.2	31.5	1.2	3.8	-0.7	446	31	963	3.1	290	50	0.00
040	145	02APR04:10:33	6.0	7.2	7.8	7.9	7.8	8.7	9.5	0.5	1.5	0.3	0	73	964	1.1	145	50	0.00
040	146	02APR04:10:26	9.4	10.6	11.1	11.3	11.2	11.8	12.4	0.4	1.2	-0.4	5	40	960	2.0	136	11	0.00
040	147	02APR04:10:17	9.7	10.8	11.4	11.5	11.4	12.1	12.9	0.4	1.3	0.0	6	79	959	2.9	180	17	0.00
040	148	02APR04:14:16	12.3	13.1	13.6	13.7	13.6	14.2	14.9	0.3	1.1	-0.4	55	94	954	3.7	195	10	0.00

STATION NUMBER	REGION	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE_95 (Deg. C)	WINDSPEED (KPH)	WIND DIRECTION (DEGREES)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	VISIBILI- LITY (KM)	PRECIP- ITATION (MM)
118	118	04APR04:20:36	-4.8	-4.8	-3.3	-2.5	-1.4	0.5	1.5	0.4	-2.1	0	948	7.0	325	45	0.00
119	119	04APR04:22:15	-5.5	-4.9	-4.4	-3.8	-2.8	0.3	1.1	0.5	-3.9	0	949	4.4	310	50	0.00
120	120	04APR04:23:15	-4.4	-7.7	-7.2	-6.5	-5.6	0.4	1.2	0.2	-6.2	0	972	2.3	282	5	0.00
121	121	04APR04:25:19	-3.2	5.8	6.8	11.0	15.5	1.8	6.8	0.6	2.9	788	34	3.3	280	50	0.00
122	122	04APR04:14:05	-2.4	-8.8	0.3	3.4	7.8	1.4	4.3	0.6	2.5	34	972	3.1	289	50	0.00
123	123	04APR04:16:36	-2.4	-8.8	0.3	3.4	7.8	1.4	4.3	0.6	2.5	34	972	3.1	289	50	0.00
124	124	04APR04:19:25	-5.2	-3.5	-2.2	-0.3	2.2	0	3.0	0.4	0.0	0	972	0.9	264	50	0.00
125	125	04APR04:22:53	-11.8	-9.8	-7.8	-4.8	-2.4	0.5	3.0	0.2	-6.5	0	971	0.9	283	50	0.00
126	126	04APR04:26:49	-7.8	-5.9	-5.4	-4.7	-1.6	0.4	3.2	1.1	-6.8	25	971	1.6	321	50	0.00
127	127	04APR04:29:52	3.4	4.4	5.4	6.3	8.3	0.4	1.9	0.8	4.5	238	978	3.5	323	50	0.00
128	128	04APR04:13:27	5.9	7.8	8.2	8.4	9.2	0.3	0.8	0.4	8.3	120	967	5.8	210	50	0.00
129	129	04APR04:13:26	-3.8	-4.2	-3.8	-3.2	0.8	0.4	1.8	2.4	-3.4	0	967	-	-	5	0.00
130	130	04APR04:17:44	-4.8	-4.8	-3.3	-2.4	-0.2	0.4	1.4	0.9	-2.8	314	972	2.1	5	50	0.00
131	131	04APR04:18:19	-5.1	-4.3	-3.8	-3.8	-1.5	0.4	1.3	1.0	-3.1	43	973	1.4	7	56	0.05
132	132	04APR04:18:19	-3.1	-1.2	-0.3	0.7	2.8	0.4	1.9	-0.1	-3.9	407	976	1.9	43	50	0.00
133	133	04APR04:18:19	-2.5	-1.3	-0.7	0.5	2.3	0.4	2.8	0.4	-2.3	493	976	4.5	35	50	0.00
134	134	04APR04:14:23	-8.4	1.1	2.2	2.5	4.7	0.8	1.1	3.4	-0.2	545	974	4.7	32	50	0.00
135	135	04APR04:17:25	-2.5	-1.3	-0.7	0.5	2.3	0.4	1.9	0.8	-0.9	179	976	3.8	31	50	0.00
136	136	04APR04:20:42	-4.4	-4.7	-3.3	-2.4	-1.0	0.7	2.4	-0.8	-7.2	310	982	2.1	327	50	0.00
137	137	04APR04:18:18	8.2	2.1	3.1	3.8	5.5	2.0	4.3	1.4	4.0	110	982	2.1	327	50	0.00
138	138	04APR04:19:05	-5.3	-3.1	-0.5	-0.5	2.4	1.8	5.9	0.4	2.1	5	963	0.9	324	50	0.00
139	139	04APR04:20:26	-10.7	-7.6	-4.2	-3.8	0.1	1.3	4.1	0.5	-4.7	0	964	0.4	4	50	0.00
140	140	04APR04:14:27	-3.8	4.4	4.7	5.2	6.8	0.2	0.8	0.3	5.4	79	957	1.5	258	50	0.00
141	141	04APR04:14:27	-3.8	4.4	4.7	5.2	6.8	0.2	0.8	0.3	5.4	79	957	1.5	258	50	0.00
142	142	04APR04:18:05	3.3	4.8	4.3	4.7	4.8	0.2	0.7	0.7	4.7	0	968	3.4	326	5	0.00
143	143	04APR04:18:05	6.9	1.9	2.8	3.2	3.7	0.4	1.5	-0.4	4.3	0	961	1.4	246	5	0.00
144	144	04APR04:18:15	19.0	28.2	20.9	25.3	28.9	1.8	2.5	0.9	19.2	445	982	2.8	271	50	0.00
145	145	04APR04:18:36	18.3	19.8	21.4	23.5	27.4	1.1	2.7	1.1	19.2	435	984	2.1	253	50	0.00
146	146	04APR04:18:36	5.9	7.1	7.7	7.7	9.2	0.4	1.2	-0.6	8.9	0	963	0.8	164	50	0.00
147	147	04APR04:18:36	9.4	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
148	148	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
149	149	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
150	150	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
151	151	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
152	152	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
153	153	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
154	154	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
155	155	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
156	156	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
157	157	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
158	158	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
159	159	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
160	160	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
161	161	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
162	162	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
163	163	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
164	164	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
165	165	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
166	166	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
167	167	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
168	168	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
169	169	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
170	170	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
171	171	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00
172	172	04APR04:18:36	9.5	10.6	10.4	10.3	10.7	0.2	0.8	0.1	10.5	4	968	2.3	144	50	0.00

GRAYLING II, DECIDUOUS (RED OAK) TREE FEATURE, LWB DATA

[illegible]



MISSION WAVELENGTH	MISSION NUMBER	IMAGE DATE-TIME	HISTOGRAM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE_NO RETURNS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (KTS)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (MM)
LMB	29	13MAR94:07:39	-13.7	-11.8	-10.7	-10.5	-10.5	-8.9	-6.8	0.8	2.8	-7.9	0	78	983	0.4	353	58	0.00
LMB	30	13MAR94:11:18	-1.6	0.1	1.2	2.1	2.1	4.5	7.7	1.3	6.4	0.3	622	61	980	0.9	0.1	58	0.00
LMB	31	13MAR94:13:25	-9.9	3.5	3.6	3.7	3.7	5.4	8.1	1.2	5.1	-0.2	-	72	986	0.8	95	58	0.00
LMB	32	13MAR94:19:09	-9.6	-7.2	-6.8	-5.7	-5.5	-3.8	8.0	1.3	4.2	-3.2	8	87	986	0.5	40	58	0.00
LMB	33	13MAR94:22:18	-12.9	-12.8	-10.9	-8.9	-7.6	-4.9	0.8	2.6	0.8	-18.4	8	72	986	0.4	220	58	0.00
LMB	34	13MAR94:26:25	-10.3	-9.3	-8.6	-8.5	-8.4	-7.6	-4.4	0.6	1.8	-7.9	86	86	986	0.4	176	58	0.00
LMB	35	13MAR94:29:41	-4.2	-3.3	-2.8	-2.4	-2.7	-2.1	-1.6	0.4	1.2	-0.5	125	92	983	1.8	176	58	0.00
LMB	36	13MAR94:38:29	-2.1	-1.5	-1.1	-1.0	-1.1	-0.7	0.3	0.8	3.2	-0.7	2	92	979	0.8	291	3	0.00
LMB	37	13MAR94:48:25	-4.5	-3.9	-3.5	-3.4	-3.5	-3.1	0.3	0.8	2.4	-2.6	6	92	979	0.6	203	2	0.00
LMB	38	13MAR94:52:25	-8.4	-6.5	-5.8	-5.1	-5.3	-4.2	-3.3	0.8	2.3	-0.5	0	71	979	0.6	90	2	0.00
LMB	39	13MAR94:58:44	0.3	3.4	7.2	7.3	7.8	10.2	17.1	2.0	4.4	-0.1	541	54	976	0.4	196	58	0.00
LMB	40	13MAR94:14:44	-7.0	-5.0	-3.8	-3.4	-3.6	-1.9	0.3	3.2	0.3	-2.5	83	83	976	0.8	90	58	0.00
LMB	41	13MAR94:18:17	-11.4	-8.9	-8.0	-7.9	-8.1	-6.9	-5.8	0.6	2.8	-0.3	-	89	-	-	90	-	-
LMB	42	13MAR94:14:36	-11.4	-8.9	-8.5	-8.4	-8.5	0.1	2.8	0.3	1.0	0.5	110	89	958	3.3	217	12	0.00
LMB	43	13MAR94:18:01	-11.5	-8.8	-8.4	-8.3	-8.4	0.1	0.5	0.3	0.9	0.4	16	89	956	1.4	232	9	0.00
LMB	44	13MAR94:19:43	-2.0	-2.0	-1.6	-1.5	-1.6	-1.0	-0.5	0.3	1.0	-0.4	81	89	956	1.4	214	58	0.00
LMB	45	13MAR94:04:24	-2.1	-1.3	-0.9	-0.8	-1.0	-0.5	-0.1	0.2	0.8	0.3	0	96	956	1.8	276	-	0.00
LMB	46	13MAR94:09:46	-5.3	-2.8	-2.3	-2.4	-2.4	-1.8	-1.3	0.3	1.8	-0.3	136	81	956	4.8	364	-	0.00
LMB	47	13MAR94:12:09	-5.1	-4.1	-3.3	-3.4	-2.5	-2.5	-1.7	0.3	1.5	-0.8	483	66	962	4.2	324	-	0.00
LMB	48	13MAR94:05:16	-17.7	-16.2	-15.7	-15.6	-15.7	-14.8	-13.3	0.5	1.4	0.3	483	66	962	4.2	324	-	0.00
LMB	49	13MAR94:13:52	-16.1	-14.3	-13.8	-13.6	-14.4	-12.4	-10.4	1.3	4.2	0.5	720	48	970	4.7	8	58	0.00
LMB	50	13MAR94:17:02	-11.3	-9.3	-8.6	-8.1	-7.8	-5.9	-4.2	1.4	4.4	1.2	268	48	973	4.3	349	58	0.00
LMB	51	13MAR94:18:21	-16.8	-14.8	-13.8	-13.4	-11.5	-9.9	-5.6	1.2	3.7	1.5	19	47	976	5.8	354	58	0.00
LMB	52	13MAR94:09:03	-10.1	-9.8	-7.1	-7.3	-6.8	-4.1	1.0	3.6	0.3	-10.8	48	47	976	5.8	354	58	0.00
LMB	53	13MAR94:14:19	-3.3	-1.5	0.3	0.3	0.2	2.2	4.1	1.1	3.6	0.3	486	38	973	1.9	321	58	0.00
LMB	54	13MAR94:17:02	-4.4	-2.9	-2.6	-2.4	-2.5	-1.8	-0.8	0.3	1.1	-0.4	556	38	969	1.7	289	58	0.00
LMB	55	13MAR94:07:55	-8.4	-7.7	-7.4	-7.3	-7.4	-6.1	0.2	0.8	-0.2	-6.5	78	39	966	0.8	239	58	0.00
LMB	56	13MAR94:15:16	-8.6	-5.8	-5.1	-5.8	-5.1	-4.2	0.5	1.4	0.1	-4.5	73	92	955	2.3	54	8	0.00
LMB	57	13MAR94:19:25	-11.7	-9.9	-7.6	-7.7	-8.0	-6.2	1.1	3.7	-0.5	-5.3	18	77	963	5.2	332	58	0.00
LMB	58	13MAR94:20:52	-16.1	-12.0	-9.8	-9.6	-9.7	-7.7	-6.3	1.3	4.3	-0.5	6	77	964	1.9	325	58	0.00
LMB	59	13MAR94:02:37	-26.1	-19.4	-13.9	-16.9	-15.3	-12.5	-7.8	2.2	6.9	-0.8	0	76	967	1.4	317	58	0.00
LMB	60	13MAR94:05:26	-25.7	-21.7	-16.3	-17.2	-17.7	-16.5	-12.8	2.2	7.3	-0.6	0	76	967	1.4	317	58	0.00
LMB	61	13MAR94:16:13	-2.7	-0.3	3.4	3.1	3.2	7.7	16.4	2.5	8.1	0.4	437	38	967	0.8	98	58	0.00
LMB	62	13MAR94:17:40	-5.7	-3.4	-1.7	-0.9	-0.8	3.3	8.4	2.1	4.8	0.7	82	38	967	0.8	325	58	0.00
LMB	63	13MAR94:01:10	-19.7	-17.6	-16.1	-16.0	-15.9	-13.2	-10.8	1.3	4.3	0.8	40	64	968	3.4	313	58	0.00
LMB	64	13MAR94:17:25	0.7	3.2	6.4	5.6	5.5	7.7	9.4	1.4	4.8	-0.2	6	84	971	1.8	12	58	0.00
LMB	65	13MAR94:22:07	-2.6	-1.7	-1.2	-1.3	-1.2	-0.4	9.5	0.4	1.3	0.4	113	34	968	2.8	137	58	0.00
LMB	66	13MAR94:04:39	-2.6	-2.8	-1.6	-1.6	-1.4	-1.2	-0.8	0.2	0.8	-0.5	6	66	967	1.6	137	58	0.00
LMB	67	13MAR94:04:51	-2.5	-2.8	-1.6	-1.6	-1.7	-1.3	-1.3	0.2	0.7	0.4	1	66	958	1.4	130	4	0.00
LMB	68	13MAR94:12:13	-10.2	-8.4	-5.2	-5.1	-5.3	-4.3	-3.5	0.7	2.2	-1.1	95	95	964	0.4	199	5	0.00

GRAYLING II, DECIDUOUS (RED OAK) TREE FEATURE, LWB DATA

## GRAYLING II, DECIDUOUS (RED OAK) TREE FEATURE, SWB DATA

STATION NUMBER	MISSION NUMBER	IMAGE DATE-TIME	MAXIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	MINIMUM TEMPERATURE (Deg. C)	RELATIVE HUMIDITY (PERCENT)	SOLAR RADIATION (W/M <sup>2</sup> )	AIR TEMPERATURE (Deg. C)	RANGE IN SECONDS	STANDARD DEVIATION (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	MINIMUM TEMPERATURE (Deg. C)	ANOMALOUS PRECIPITATION (MILLIMETERS)	WIND SPEED (M/S)	WIND DIRECTION (DEGREES)	WIND VELOCITY (M/S)	PRECIPITATION (MILLIMETERS)
040	117	04APR04:05:05	-2.7	-1.4	-0.7	-0.6	-0.7	0.3	1.6	0.5	0.5	1.6	0.3	-0.8	0.3	0.3	0.0	0.0	0.0	0.0
040	118	04APR04:12:30	-3.8	-2.4	-1.5	-1.5	-1.5	-0.8	0.6	0.4	0.4	0.6	-0.8	-1.5	-0.8	0.0	0.0	0.0	0.0	0.0
040	119	04APR04:12:31	-5.5	-3.8	-3.1	-2.8	-3.1	-2.2	-0.8	0.5	0.5	0.5	-2.2	-3.1	-0.8	0.0	0.0	0.0	0.0	0.0
040	120	04APR04:12:31	-5.8	-4.3	-3.7	-3.6	-3.7	-3.5	-0.8	0.5	0.5	0.5	-3.5	-3.7	-0.8	0.0	0.0	0.0	0.0	0.0
040	121	04APR04:15:19	-7.4	-6.1	-5.5	-5.3	-5.5	-4.4	-3.4	0.5	0.5	0.5	-4.4	-5.5	-3.4	0.0	0.0	0.0	0.0	0.0
040	122	04APR04:15:05	5.2	9.1	12.3	12.6	12.9	17.2	20.9	2.5	0.2	0.1	17.2	12.9	20.9	0.0	0.0	0.0	0.0	0.0
040	123	04APR04:16:05	-0.4	1.8	3.2	3.5	3.5	5.8	9.2	1.3	4.0	0.5	5.8	3.5	9.2	0.0	0.0	0.0	0.0	0.0
040	124	04APR04:16:34	-0.4	-1.6	-0.2	-0.1	-0.2	1.3	3.4	0.9	0.9	0.2	1.3	-0.2	3.4	0.0	0.0	0.0	0.0	0.0
040	125	04APR04:17:25	-2.6	-0.7	-0.5	-0.2	-0.5	-0.8	-2.6	0.9	2.7	-0.8	-0.8	-0.5	-2.6	0.0	0.0	0.0	0.0	0.0
040	126	04APR04:18:13	-5.1	-4.1	-3.2	-3.1	-3.2	-2.2	-1.2	0.6	2.0	-0.1	-1.2	-3.1	-1.2	0.0	0.0	0.0	0.0	0.0
040	127	04APR04:18:19	4.8	6.4	7.2	7.4	7.2	8.4	10.4	0.6	0.6	0.6	8.4	7.2	10.4	0.0	0.0	0.0	0.0	0.0
040	128	04APR04:18:27	6.8	8.1	8.7	8.9	8.7	9.4	10.7	0.4	1.3	0.2	9.4	8.7	10.7	0.0	0.0	0.0	0.0	0.0
040	129	04APR04:18:37	-4.7	-3.3	-2.4	-2.3	-2.4	-1.5	-0.3	0.6	1.6	-0.4	-1.5	-2.4	-0.3	0.0	0.0	0.0	0.0	0.0
040	130	04APR04:18:45	-2.6	-1.3	-0.3	-0.2	-0.3	0.8	2.5	0.6	0.6	0.6	0.8	-0.3	2.5	0.0	0.0	0.0	0.0	0.0
040	131	04APR04:17:44	-6.1	-4.7	-3.9	-3.8	-3.9	-2.7	-1.9	0.8	0.6	0.6	-2.7	-3.9	-1.9	0.0	0.0	0.0	0.0	0.0
040	132	04APR04:18:19	-4.4	-3.0	-2.2	-2.0	-2.2	-1.1	-0.3	0.6	0.6	0.6	-1.1	-2.2	-0.3	0.0	0.0	0.0	0.0	0.0
040	133	04APR04:18:19	1.1	2.7	3.5	3.5	3.5	4.2	4.8	0.6	0.6	0.6	4.2	3.5	4.8	0.0	0.0	0.0	0.0	0.0
040	134	04APR04:18:19	1.1	2.5	3.3	3.5	3.5	4.2	4.8	0.6	0.6	0.6	4.2	3.5	4.8	0.0	0.0	0.0	0.0	0.0
040	135	04APR04:18:19	3.5	6.0	7.6	7.6	7.6	8.3	11.3	1.6	5.3	0.4	11.3	7.6	11.3	0.0	0.0	0.0	0.0	0.0
040	136	04APR04:18:23	0.1	1.4	2.3	2.4	2.3	3.4	5.3	0.6	2.0	0.3	5.3	2.3	5.3	0.0	0.0	0.0	0.0	0.0
040	137	04APR04:18:23	0.1	1.4	2.3	2.4	2.3	3.4	5.3	0.6	2.0	0.3	5.3	2.3	5.3	0.0	0.0	0.0	0.0	0.0
040	138	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	139	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	140	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	141	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	142	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	143	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	144	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	145	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	146	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	147	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	148	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	149	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	150	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	151	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	152	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	153	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	154	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	155	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	156	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	157	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	158	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	159	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	160	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	161	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	162	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	163	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	164	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	165	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	166	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	167	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	168	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	169	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	170	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	171	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0
040	172	04APR04:18:23	-1.4	0.7	2.9	2.9	2.9	3.2	3.2	1.4	4.5	0.3	3.2	2.9	3.2	0.0	0.0	0.0	0.0	0.0

MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MODIM TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE, 90 PERCENT (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR IRRADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	SAMOMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPS)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (MM)
80	200004-22:15	-4.9	-4.1	-3.6	-3.6	-3.1	-1.9	-0.7	0.7	2.2	-0.4	0	95	964	0.4	199	5	0.00
81	200004-22:25	-6.7	-4.1	-2.9	-2.9	-3.1	-1.9	-0.4	0.7	2.2	-0.1	0	92	965	0.5	198	42	0.00
82	200004-23:05	-8.5	-4.3	-3.3	-3.3	-3.3	-1.9	-2.4	0.7	2.3	-0.2	0	92	966	0.6	199	50	0.00
83	200004-11:50	7.3	12.1	14.2	14.2	14.0	15.7	18.2	1.2	3.6	-1.1	737	35	964	4.0	264	50	0.00
84	200004-14:19	8.5	14.0	14.2	14.2	14.1	18.1	21.1	1.2	4.1	-0.4	603	34	962	3.9	289	50	0.00
85	200004-16:35	2.3	4.8	6.7	6.7	6.5	7.9	9.1	1.0	3.1	-0.7	0	56	962	1.4	222	50	0.00
86	200004-16:17	10.1	13.3	14.3	14.3	14.3	15.7	17.0	0.8	2.4	0.1	422	43	962	2.4	266	50	0.00
87	200004-19:16	2.3	4.9	5.9	5.9	6.9	8.2	7.4	0.7	2.2	0.4	0	51	965	2.5	39	50	0.00
88	200004-22:06	-0.2	1.4	2.2	2.2	2.0	3.0	4.4	0.5	1.7	-0.1	0	73	965	1.9	42	50	0.00
89	200004-09:06	-0.7	0.8	1.6	1.7	1.6	2.5	3.5	0.5	1.7	-0.1	26	96	957	1.3	267	6	0.00
90	200004-14:46	-4.1	-4.0	-4.1	-4.1	-4.3	-3.1	-2.0	0.4	1.9	-0.1	0	72	962	5.2	207	13	0.00
91	200004-23:05	-0.4	-3.0	-3.1	-3.1	-3.0	-1.1	-0.4	0.4	1.9	0.2	0	73	972	4.4	306	49	0.00
92	200004-09:17	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	0.5	2.0	0.1	7	78	976	3.4	314	50	0.00
93	200004-10:44	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	0.5	2.0	0.1	64	64	976	3.4	319	50	0.00
94	200004-10:17	-7.8	-5.0	-3.7	-3.7	-3.8	-2.3	-0.3	0.9	2.7	0.1	0	58	978	1.5	0	50	0.00
95	200004-23:42	-11.4	-9.8	-8.4	-8.4	-8.4	-6.3	-4.0	1.0	3.5	0.5	0	85	978	0.0	94	50	0.00
96	200004-07:46	-6.3	-4.4	-3.7	-3.7	-3.6	-2.4	-1.5	0.4	2.0	-0.1	44	75	977	0.0	140	50	0.00
97	200004-10:50	4.8	6.7	8.9	9.0	8.9	11.3	14.1	1.4	4.6	0.1	27	49	975	4.4	215	50	0.00
98	200004-10:32	-1.2	0.3	1.1	1.2	1.1	2.2	3.4	0.4	1.0	0.2	176	80	965	0.1	119	9	0.00
99	200004-08:06	-3.4	-2.2	-1.5	-1.5	-1.5	-0.4	0.4	0.5	1.7	0.1	43	84	962	3.5	233	0	0.00
100	200004-13:44	4.1	5.4	6.3	6.4	6.4	8.2	10.5	0.8	2.4	0.5	324	62	966	3.0	262	50	0.00
101	200004-17:07	3.8	5.8	8.4	8.4	8.0	7.1	8.7	0.7	2.1	0.3	395	76	970	0.0	264	50	0.00
102	200004-19:26	-1.7	-1.0	-1.5	-1.5	-1.5	-0.5	0.4	1.1	3.1	0.3	0	94	973	0.0	90	5	0.00
103	200004-09:52	-3.4	-2.9	-2.9	-2.9	-3.0	-1.6	-0.3	0.4	2.1	-0.2	0	87	960	0.0	80	0	0.00
104	200004-10:44	-5.3	-3.7	-2.6	-2.6	-2.7	-1.4	-0.3	0.4	2.1	-0.4	0	89	963	0.5	326	14	0.00
105	200004-21:57	-7.5	-4.7	-3.4	-3.4	-3.6	-2.3	-1.1	0.7	2.4	-0.4	0	92	961	0.2	37	11	0.00
106	200004-23:12	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	0.9	2.0	0.0	0	80	962	1.5	330	50	0.00
107	200004-03:15	-7.7	-4.9	-3.9	-3.9	-3.9	-3.7	-2.3	2.0	2.2	0.2	0	55	966	2.0	304	50	0.00
108	200004-11:21	1.8	4.1	7.1	7.1	7.2	10.4	13.9	2.0	4.4	0.1	761	47	962	4.3	201	50	0.00
109	200004-11:14	4.2	7.5	10.9	10.9	10.9	14.4	17.7	2.2	7.1	0.1	16	54	963	1.1	251	50	0.00
110	200004-10:42	-3.3	-1.5	-0.4	-0.4	-0.3	1.1	3.1	0.5	2.4	0.1	0	80	977	0.0	90	14	0.00
111	200004-04:02	-11.4	-9.7	-7.4	-7.4	-7.5	-5.8	-4.0	0.9	2.9	0.2	0	80	977	0.0	90	14	0.00
112	200004-04:26	-7.9	-5.5	-4.7	-4.7	-4.4	-2.9	-1.4	0.8	2.4	0.3	15	50	975	3.5	214	50	0.00
113	200004-10:23	5.1	6.4	8.3	8.4	8.3	10.2	12.1	1.1	3.4	0.0	475	34	971	3.0	220	50	0.00
114	200004-14:52	10.4	13.7	14.3	14.3	14.3	16.4	18.5	1.2	3.9	0.4	320	54	971	0.5	221	50	0.00
115	200004-09:12	-5.2	-3.6	-0.8	-0.8	-1.1	0.3	1.7	0.9	2.9	-0.3	0	90	971	0.5	90	14	0.00
116	200004-04:07	-7.9	-4.9	-4.7	-4.7	-4.6	-3.3	-1.9	0.4	2.7	-0.0	0	89	971	0.5	90	14	0.00
117	200004-04:07	-4.2	-3.5	-3.5	-3.5	-3.5	-2.4	-0.4	0.7	2.3	0.1	0	89	971	0.5	90	14	0.00
118	200004-23:16	-3.6	-1.8	-0.7	-0.6	-0.7	0.4	2.2	0.7	2.3	-0.1	0	47	973	0.0	132	50	0.00

GRAYLING II, DECIDUOUS (RED OAK) TREE FEATURE, SWB DATA

MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 90 (Deg. C)	SKINNESS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPS)	WIND DIRECTION (DEG)	VISIBILI- LITY (M)	PRECIPIT- ATION (MM)
29	198004-01:29	-11.2	-9.2	-8.2	-6.9	-4.7	-4.4	0.8	2.5	0.3	-7.9	0	78	983	0.4	253	50	0.00
30	198004-01:30	-9.2	-7.1	-5.1	-3.4	-1.2	-1.7	1.7	5.7	-0.2	-2.2	422	61	988	0.9	41	50	0.00
31	198004-01:31	1.4	4.5	7.1	7.4	10.3	12.7	1.7	5.7	-0.2	-2.2	0	72	986	0.5	90	50	0.00
32	198004-01:32	-11.8	-9.9	-8.9	-7.8	-5.2	-5.3	0.8	2.7	0.3	-10.4	0	86	986	0.5	220	50	0.00
33	198004-01:33	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	134	0	985	1.8	176	50	0.00
34	198004-01:34	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	2	92	979	0.4	205	50	0.00
35	198004-01:35	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	91	979	0.4	90	50	0.00
36	198004-01:36	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	541	50	976	0.4	96	50	0.00
37	198004-01:37	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
38	198004-01:38	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
39	198004-01:39	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
40	198004-01:40	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
41	198004-01:41	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
42	198004-01:42	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
43	198004-01:43	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
44	198004-01:44	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
45	198004-01:45	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
46	198004-01:46	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
47	198004-01:47	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
48	198004-01:48	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
49	198004-01:49	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
50	198004-01:50	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
51	198004-01:51	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
52	198004-01:52	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
53	198004-01:53	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
54	198004-01:54	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
55	198004-01:55	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
56	198004-01:56	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
57	198004-01:57	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
58	198004-01:58	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
59	198004-01:59	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
60	198004-02:00	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
61	198004-02:01	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
62	198004-02:02	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
63	198004-02:03	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
64	198004-02:04	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
65	198004-02:05	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
66	198004-02:06	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
67	198004-02:07	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
68	198004-02:08	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
69	198004-02:09	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00
70	198004-02:10	-9.1	-7.2	-6.5	-4.5	-2.4	-1.6	0.5	1.7	-0.3	-2.5	0	83	976	0.4	90	50	0.00

GRAYLING II, DECIDUOUS (RED OAK) TREE FEATURE, SWB DATA

## GRAYLING II, DECIDUOUS (BLACK OAK) TREELINE FEATURE, LWB DATA

STATION NUMBER	DATE-TIME	IMAGE TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MEAN TURBULENCE (Deg. C)	STANDARD DEVIATION (Deg. C)	NAME OF REMINDER (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	NUMERICAL PRECIPITATION (MILLIMETERS)	SOLAR WIND (MPS)	SOLAR RADIATION (W/M <sup>2</sup> )	VELOCITY LWB (MPS)	PRECIPITATION (MILLIMETERS)
126	04/09/01-08:20	-5.5	-5.1	-4.8	-4.3	-1.6	0.4	0.8	-3.7	25	85	971	1.3	202	30	0.00
127	04/09/01-09:54	3.7	4.4	4.6	5.4	4.2	0.3	1.0	4.5	261	44	990	2.5	213	30	0.00
128	04/09/01-13:28	7.8	7.8	8.1	8.1	8.9	0.2	0.7	8.3	115	34	967	5.1	219	30	0.00
129	04/09/01-08:04	-4.2	-3.7	-3.5	-3.3	-2.8	0.6	0.9	-3.4	0	93	967	0	-	3	0.00
130	04/09/01-13:28	-2.9	-2.5	-2.1	-2.0	-0.9	0.4	1.2	-2.0	326	81	972	3.2	309	30	0.00
131	04/09/01-17:45	-4.4	-4.8	-3.8	-3.8	-3.0	0.4	1.0	-2.8	90	75	973	2.4	304	30	0.00
132	04/09/01-18:28	-4.4	-4.1	-3.8	-3.5	-2.7	0.3	0.8	-2.5	43	75	973	1.9	7	30	0.00
133	04/09/01-09:28	-2.4	-1.6	-1.1	0.2	1.7	0.5	1.8	-1.3	415	47	976	2.4	54	30	0.00
134	04/09/01-11:09	-2.5	-0.7	0.2	1.3	2.5	0.6	2.0	-0.3	505	80	976	4.8	37	30	0.00
135	04/09/01-14:26	1.7	2.7	3.3	3.9	5.9	1.1	3.3	1.9	447	47	976	3.2	31	30	0.00
136	04/09/01-17:39	-2.7	-1.8	-1.6	-1.4	0.5	0.4	1.3	-0.9	179	45	976	3.8	31	30	0.00
137	04/09/01-07:42	-5.2	-4.4	-3.5	-3.2	-2.2	0.1	2.2	-2.2	310	49	982	0.7	208	30	0.00
138	04/09/01-18:21	1.9	2.5	3.1	3.2	4.2	0.5	1.7	3.9	161	34	983	1.4	2	30	0.00
139	04/09/01-19:28	-2.9	-1.3	-0.6	-0.7	0.3	1.7	0.5	0.5	0	52	985	0.2	307	30	0.00
140	04/09/01-20:17	-4.0	-5.3	-4.0	-3.7	-2.2	0.5	1.4	-4.4	0	78	984	0.7	26	30	0.00
141	04/09/01-13:54	5.5	5.8	6.0	6.4	7.5	0.3	0.7	6.4	47	90	957	1.4	209	30	0.00
142	04/09/01-16:36	3.9	4.5	4.7	5.1	5.4	0.2	0.4	5.4	49	91	957	2.7	205	30	0.00
143	04/09/01-08:36	3.5	4.1	4.2	4.6	4.9	0.3	0.4	4.4	0	80	960	1.3	209	30	0.00
144	04/09/01-08:42	3.5	4.1	4.2	4.6	4.9	0.3	0.4	4.4	0	80	960	1.3	209	30	0.00
145	04/09/01-15:14	10.2	10.8	10.3	11.5	12.4	0.4	1.7	10.3	644	31	963	3.1	204	30	0.00
146	04/09/01-16:23	16.7	16.1	16.4	16.7	17.2	0.5	1.4	16.1	634	31	964	1.9	245	30	0.00
147	04/09/01-08:33	7.8	8.1	8.5	8.8	9.2	0.2	0.7	8.9	0	73	964	1.1	165	30	0.00
148	04/09/01-08:36	9.5	10.1	10.3	10.7	11.9	0.2	0.7	10.5	5	88	964	2.8	156	11	0.00
149	04/09/01-08:36	10.3	10.8	11.0	11.5	11.7	0.2	0.7	11.4	4	79	959	2.9	108	17	0.00
150	04/09/01-16:16	12.2	12.6	12.8	13.1	13.4	0.2	0.5	13.0	55	94	954	3.7	195	30	0.00

GRAYLING II, DECIDUOUS (BLACK OAK) TREELINE FEATURE, LWB DATA

MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 90 PERCENTILE (Deg. C)	ALL TEMPERATURE (Deg. C)	SUN RADIATION (W/m <sup>2</sup> )	RELATIVE HUMIDITY (percent)	BAROMETRIC PRESSURE (mmHg)	WIND SPEED (mph)	WIND DIRECTION (degrees)	WIND LIFT (ft)	PRECIP- ITATION (mm)
100	20000410100	2.4	3.4	3.9	4.0	5.1	1.1	4.0	0	52	945	2.2	75	50	0.00
101	20000410210	-1.2	-0.5	-0.2	-0.2	0.4	0.2	0.7	0	76	945	1.5	57	50	0.00
102	20000410310	-0.6	-0.1	0.1	0.3	0.8	0.2	0.6	37	95	937	1.9	267	6	0.00
103	20000410410	-1.4	-0.9	-0.8	-0.6	0.7	0.2	-0.3	206	80	942	4.6	256	6	0.00
104	20000410510	-0.9	-0.5	-0.2	-0.1	0.3	0.2	0.6	0	72	972	4.6	316	50	0.00
105	20000410610	-0.7	-0.3	-0.1	-0.1	0.4	0.2	0.6	0	73	972	3.0	306	50	0.00
106	20000410710	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	7	70	976	4.3	320	50	0.00
107	20000410810	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	442	43	977	4.6	320	50	0.00
108	20000410910	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	50	978	1.2	307	50	0.00
109	20000411010	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	48	978	0.8	90	50	0.00
110	20000411110	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	79	75	975	4.5	170	50	0.00
111	20000411210	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	660	59	975	4.5	170	50	0.00
112	20000411310	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	202	47	962	0.7	130	50	0.00
113	20000411410	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	46	96	967	3.7	299	50	0.00
114	20000411510	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	162	46	967	0.7	11	50	0.00
115	20000411610	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	94	973	0.8	90	50	0.00
116	20000411710	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	90	980	0.7	11	50	0.00
117	20000411810	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	90	981	0.6	1	50	0.00
118	20000411910	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	92	981	0.3	37	11	0.00
119	20000412010	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	799	54	984	1.0	326	50	0.00
120	20000412110	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	505	47	982	3.0	306	50	0.00
121	20000412210	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	16	56	981	2.0	260	50	0.00
122	20000412310	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	90	977	0.6	90	50	0.00
123	20000412410	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	451	49	977	0.5	212	50	0.00
124	20000412510	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	260	34	971	3.2	256	50	0.00
125	20000412610	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	44	971	0.9	209	50	0.00
126	20000412710	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	90	971	0.6	90	50	0.00
127	20000412810	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	46	971	6.5	26	50	0.00
128	20000412910	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	47	973	1.3	131	50	0.00
129	20000413010	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	51	972	1.0	106	50	0.00
130	20000413110	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	46	968	7.0	317	50	0.00
131	20000413210	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	72	969	5.0	300	50	0.00
132	20000413310	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	60	972	1.0	310	50	0.00
133	20000413410	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	170	35	973	3.2	296	50	0.00
134	20000413510	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	25	34	972	2.0	296	50	0.00
135	20000413610	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	36	972	1.1	266	50	0.00
136	20000413710	-0.3	-0.2	-0.1	-0.1	0.3	0.2	0.6	0	75	971	9.0	219	50	0.00



## GRAYLING II, DECIDUOUS (BLACK OAK) TREELINE FEATURE, SWB DATA

WGS84 NUMBER	WGS84 NAME	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	AVERAGE WIND (Deg. C)	ALL WINDS (Deg. C)	WIND SPEED (m/s)	RELATIVE HUMIDITY (PERCENT)	SEALED RELATIVE HUMIDITY (PERCENT)	WIND DIRECTION (DEGREES)	WIND SPEED (m/s)	WIND DIRECTION (DEGREES)	WIND SPEED (m/s)
126	GRAYLING-19-25	19-25	-3.3	-1.2	-0.3	-0.3	0.4	1.3	0.6	1.8	-0.3	1.1	34	972	972	208	1.1	972
127	GRAYLING-19-26	19-26	-2.9	-0.3	-0.3	-0.3	-0.3	-0.3	0.6	2.8	-0.3	0.8	75	971	971	210	0.8	971
128	GRAYLING-19-27	19-27	-3.6	-1.9	-1.9	-1.9	-1.9	-1.9	0.5	1.7	-0.3	1.3	85	971	971	222	1.3	971
129	GRAYLING-19-28	19-28	6.9	5.7	6.5	6.5	7.3	8.1	0.5	1.5	0.1	2.5	46	970	970	235	2.5	970
130	GRAYLING-19-29	19-29	7.1	6.0	6.7	6.7	7.4	8.2	0.4	1.3	-0.2	3.1	34	967	967	249	3.1	967
131	GRAYLING-19-30	19-30	-4.4	-3.4	-2.6	-2.6	-1.6	-0.8	0.5	1.8	0.2	-	95	967	967	-	-	967
132	GRAYLING-19-31	19-31	-3.1	-1.8	-1.8	-1.8	-0.1	1.0	0.5	1.7	0.2	3.2	81	972	972	309	3.2	972
133	GRAYLING-19-32	19-32	-4.3	-3.1	-2.2	-2.2	-1.4	-0.6	0.4	1.8	-0.4	2.6	73	973	973	306	2.6	973
134	GRAYLING-19-33	19-33	-4.7	-3.6	-2.7	-2.7	-1.8	-0.8	0.4	1.8	-0.4	1.9	75	973	973	306	1.9	973
135	GRAYLING-19-34	19-34	9.7	8.8	9.7	9.7	10.1	10.1	0.4	1.8	-0.3	4.0	62	976	976	307	4.0	976
136	GRAYLING-19-35	19-35	5.2	4.5	5.2	5.2	5.9	6.2	0.7	2.2	-0.3	4.0	62	976	976	307	4.0	976
137	GRAYLING-19-36	19-36	-0.7	0.3	1.2	1.2	2.2	3.4	0.9	3.0	0.8	4.0	47	976	976	307	4.0	976
138	GRAYLING-19-37	19-37	-2.2	-0.8	0.1	0.5	2.2	3.4	0.9	3.0	0.8	4.0	47	976	976	307	4.0	976
139	GRAYLING-19-38	19-38	7.0	6.8	7.0	7.0	7.4	7.4	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
140	GRAYLING-19-39	19-39	-1.5	-0.2	0.4	0.8	1.7	2.6	0.6	1.9	-0.4	3.4	49	976	976	307	3.4	976
141	GRAYLING-19-40	19-40	-4.2	-3.6	-2.6	-2.6	-1.6	-0.5	0.6	1.9	-0.4	3.4	49	976	976	307	3.4	976
142	GRAYLING-19-41	19-41	5.3	4.2	4.9	4.9	5.4	5.4	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
143	GRAYLING-19-42	19-42	5.8	5.8	5.8	5.8	5.8	5.8	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
144	GRAYLING-19-43	19-43	5.1	4.5	5.1	5.1	5.1	5.1	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
145	GRAYLING-19-44	19-44	2.7	3.8	4.5	4.5	5.2	6.0	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
146	GRAYLING-19-45	19-45	28.9	21.7	22.3	22.3	26.7	27.6	1.0	3.0	1.6	4.4	81	961	961	236	4.4	961
147	GRAYLING-19-46	19-46	28.7	21.4	22.1	22.1	26.7	27.6	1.0	3.0	1.6	4.4	81	961	961	236	4.4	961
148	GRAYLING-19-47	19-47	7.9	8.9	9.4	9.4	10.2	10.4	0.4	1.8	-0.4	3.4	49	976	976	307	3.4	976
149	GRAYLING-19-48	19-48	10.2	10.9	11.4	11.4	12.0	12.7	0.3	1.1	-0.8	3.4	49	976	976	307	3.4	976
150	GRAYLING-19-49	19-49	10.2	11.7	12.2	12.2	12.8	13.4	0.4	1.1	-0.4	3.4	49	976	976	307	3.4	976
151	GRAYLING-19-50	19-50	10.2	12.9	13.4	13.4	14.0	14.7	0.3	1.1	-0.4	3.4	49	976	976	307	3.4	976
152	GRAYLING-19-51	19-51	12.3	12.9	13.4	13.4	14.0	14.7	0.3	1.1	-0.4	3.4	49	976	976	307	3.4	976



## GRAYLING II, DECIDUOUS (BLACK OAK) TREELINE FEATURE, SWB DATA

STATION NUMBER	STATION NAME	TIME DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MINIMUM TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE_90 (Deg. C)	WINDSPEED (m/s)	WIND DIRECTION (DEGREES)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (hPa)	WIND SPEED (m/s)	WIND DIRECTION (DEGREES)	VISIBILITY (km)	PRECIP- ITATION (mm)
500	77	200004140200	6.9	12.1	12.8	12.9	13.9	16.8	0.4	1.8	-0.7	0.9	42	965	2.2	78	50	0.00
500	78	200004140206	3.2	4.2	5.0	5.0	5.7	6.2	0.4	1.5	-0.3	0.9	52	965	2.2	75	50	0.00
500	80	200004140210	-0.3	0.4	1.2	1.4	2.2	3.2	0.5	1.4	-0.2	0.7	6	965	1.3	37	50	0.00
500	81	200004140211	0.2	1.2	1.8	1.9	2.7	3.5	0.5	1.6	0.1	0.9	95	967	1.9	207	4	0.00
500	82	200004140217	-0.6	0.3	1.0	1.1	1.6	2.6	0.5	1.5	-0.2	-0.3	80	962	4.6	256	8	0.00
500	83	200004140224	-0.7	-0.4	-0.7	-0.9	-0.8	-0.3	0.6	1.8	-0.2	-0.3	72	972	4.4	316	50	0.00
500	84	200004140225	-0.7	-0.6	-0.7	-0.9	-0.7	-0.2	0.6	1.9	-0.0	-0.2	72	972	3.0	306	50	0.00
500	85	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	86	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	87	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	88	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	89	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	90	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	91	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	92	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	93	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	94	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	95	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	96	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	97	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	98	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	99	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	100	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	101	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	102	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	103	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	104	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	105	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	106	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	107	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	108	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	109	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	110	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	111	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	112	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	113	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	114	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	115	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	116	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	117	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	118	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	119	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	120	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	121	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	122	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00
500	123	200004140225	-0.3	-0.3	-0.3	-0.4	-0.3	-0.1	0.6	2.0	-0.3	-0.7	78	976	4.3	327	50	0.00

GRAYLING II, DECIDUOUS (BLACK OAK) TREELINE FEATURE, SWB DATA

STATION	DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE 95 (Deg. C)	ALL TEMPERATURE (Deg. C)	MEAN RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPS)	WIND DIRECTION (DEGREES)	WINDGUST (MPS)	PRECIPITATION (MM)
29	11/06/01:01:26	-10.5	-9.2	-8.4	-7.2	-6.4	0.6	2.0	-7.9	0	70	900	1.1	200	1.1	0.00
30	11/06/01:11:20	3.1	4.8	7.2	10.2	11.5	1.6	5.1	-2.4	507	61	907	0.7	80	30	0.00
31	11/06/01:19:45	-5.8	-4.1	-3.1	-2.2	-1.4	0.6	2.0	-3.0	0	64	906	0.8	90	30	0.00
32	11/06/01:28:41	-11.8	-10.7	-9.8	-8.5	-7.7	0.6	2.1	-8.2	0	66	906	0.4	53	30	0.00
33	11/06/01:36:22	-8.5	-7.5	-6.7	-5.8	-4.8	0.5	1.8	-4.8	0	67	906	0.2	220	30	0.00
34	11/06/01:44:14	-2.6	-1.5	-0.8	-0.1	0.7	0.5	1.4	-0.2	136	44	905	1.9	190	30	0.00
35	11/06/01:50:27	-1.9	-1.0	-0.4	-0.2	0.5	1.1	0.4	-0.3	3	92	970	1.2	207	3	0.00
36	11/06/01:58:16	-4.5	-3.4	-2.9	-2.0	-1.4	0.5	1.5	-2.3	0	92	970	0.8	200	2	0.00
37	11/06/02:05:50	-7.1	-6.2	-5.4	-4.5	-3.5	0.6	1.7	-4.3	0	84	971	0.8	90	30	0.00
38	11/06/02:13:16	-7.7	-6.8	-6.1	-5.2	-4.3	0.5	1.5	-4.2	0	87	950	4.4	210	10	0.00
39	11/06/02:20:48	-8.4	-7.5	-6.8	-5.9	-5.0	0.5	1.7	-6.0	12	89	956	2.3	232	9	0.00
40	11/06/02:28:42	-1.2	-0.2	0.6	1.4	2.0	0.5	1.6	0.1	0	89	956	1.6	212	30	0.00
41	11/06/02:36:27	-2.3	-1.4	-0.6	0.3	1.2	0.5	1.6	-0.5	0	91	956	0.9	200	0	0.00
42	11/06/02:44:19	-3.1	-2.1	-1.3	-0.4	0.5	0.5	1.7	-0.1	193	62	950	2.7	326	0	0.00
43	11/06/02:52:13	-19.4	-18.2	-17.9	-16.8	-15.8	0.6	2.4	-12.4	375	67	942	4.8	340	0	0.00
44	11/06/03:00:42	-5.8	-4.8	-4.1	-3.3	-2.4	0.5	2.1	-6.4	0	61	970	4.1	382	30	0.00
45	11/06/03:08:16	-9.8	-8.8	-8.1	-7.2	-6.3	0.5	2.5	-9.9	742	42	973	3.5	382	30	0.00
46	11/06/03:15:47	-11.4	-10.4	-9.5	-8.5	-7.6	0.5	2.4	-10.9	225	43	973	3.5	382	30	0.00
47	11/06/03:23:11	-5.1	-4.1	-3.4	-2.4	-1.5	0.5	2.1	-6.4	27	44	973	1.1	340	30	0.00
48	11/06/03:30:45	-7.5	-6.5	-5.8	-4.8	-3.9	0.5	2.1	-10.9	410	46	973	1.1	340	30	0.00
49	11/06/03:38:17	-7.7	-6.7	-6.0	-5.0	-4.1	0.5	2.1	-10.9	7	92	973	1.1	380	30	0.00
50	11/06/03:45:48	-12.2	-11.2	-10.3	-9.3	-8.4	0.5	2.1	-10.9	14	77	942	2.5	380	30	0.00
51	11/06/03:53:20	-12.2	-11.2	-10.3	-9.3	-8.4	0.5	2.1	-10.9	0	66	942	1.8	307	40	0.00
52	11/06/04:00:52	-14.8	-13.8	-12.9	-11.9	-11.0	0.5	2.1	-12.4	0	74	942	0.8	90	30	0.00
53	11/06/04:08:25	-13.3	-12.3	-11.4	-10.4	-9.5	0.5	2.1	-12.4	0	80	942	0.8	90	30	0.00
54	11/06/04:15:59	-13.3	-12.3	-11.4	-10.4	-9.5	0.5	2.1	-12.4	190	41	940	3.9	200	30	0.00
55	11/06/04:23:32	-1.8	-0.8	0.0	0.9	1.6	0.5	1.7	-0.1	130	33	945	2.1	140	30	0.00
56	11/06/04:31:05	-3.8	-2.8	-2.0	-1.1	-0.2	0.5	1.7	-0.1	0	46	947	2.3	194	30	0.00
57	11/06/04:38:38	-4.7	-3.7	-2.9	-2.0	-1.1	0.5	1.5	-0.1	1	94	940	1.9	48	2	0.00
58	11/06/04:46:11	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	91	945	0.4	200	5	0.00
59	11/06/04:53:44	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	92	945	0.4	90	30	0.00
60	11/06/05:01:17	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	92	945	0.4	90	30	0.00
61	11/06/05:08:50	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	720	34	945	0.4	242	30	0.00
62	11/06/05:16:23	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
63	11/06/05:23:56	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
64	11/06/05:31:29	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
65	11/06/05:39:02	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
66	11/06/05:46:35	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
67	11/06/05:54:08	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
68	11/06/06:01:41	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
69	11/06/06:09:14	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
70	11/06/06:16:47	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
71	11/06/06:24:20	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
72	11/06/06:31:53	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
73	11/06/06:39:26	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
74	11/06/06:46:59	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
75	11/06/06:54:32	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00
76	11/06/07:02:05	-4.1	-3.1	-2.4	-1.5	-0.6	0.5	1.8	-0.2	0	94	945	0.4	90	30	0.00

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, LWB DATA

WAVEID	MISSION	IMAGE	MISSION	5-PERCENTILE	MEAN	95-PERCENTILE	MINIMUM	STANDARD	RANGE_95	AIR	SOLAR	RELATIVE	MAGNETIC	WIND	WIND	WIND	WIND	PRECIPITATION
	NUMBER	DATE-TIME	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	TEMPERATURE	DEVIATION	(Deg. C)	(Deg. C)	(Deg. F)	(PERCENT)	(MICROBAR)	(MPH)	(MPH)	(MPH)	(MPH)	(mm)
130	72	200004120225	-7.7	-5.9	-3.2	-3.2	-2.1	0.4	1.3	0.4	0	92	965	0.3	199	43	0.00	
130	73	200004120325	-9.3	-8.9	-8.3	-8.3	-6.8	0.5	1.5	-7.2	0	92	965	0.0	90	50	0.00	
130	74	200004111150	4.5	9.5	11.5	11.0	14.9	0.8	2.5	10.4	737	35	964	4.8	264	50	0.00	
130	75	200004141119	4.4	10.3	12.5	12.1	16.3	1.0	2.8	11.9	683	34	962	5.9	230	50	0.00	
130	76	200004120133	0.2	4.3	5.2	5.1	5.0	0.3	0.5	4.1	0	54	962	1.4	222	50	0.00	
130	77	200004141117	2.9	9.2	10.4	10.4	13.3	0.9	2.6	8.9	482	43	965	2.4	46	50	0.00	
130	78	200004141117	2.9	9.2	10.4	10.4	13.3	0.9	2.6	8.9	482	43	965	2.4	46	50	0.00	
130	79	200004141118	1.2	3.1	3.5	3.4	5.1	0.3	0.9	4.0	0	51	965	2.5	50	50	0.00	
130	80	200004122108	-0.8	0.0	0.3	0.3	1.4	0.2	0.7	0.0	35	96	957	1.9	42	50	0.00	
130	81	200004140704	-4.4	8.5	0.7	0.7	0.6	0.1	0.2	0.4	206	79	962	5.2	347	13	0.00	
130	82	200004141148	-1.3	-0.9	-0.5	-0.5	-0.8	0.2	0.7	-0.1	0	72	972	4.4	366	50	0.00	
130	83	200004122105	-7.8	-6.1	-3.7	-3.7	-4.9	0.2	0.7	-0.2	0	73	972	3.7	389	49	0.00	
130	84	200004120116	-8.3	-7.4	-6.1	-6.1	-6.1	0.2	0.8	-0.3	7	70	970	3.4	316	50	0.00	
130	85	200004140916	-4.1	-3.4	-2.9	-2.9	-0.9	0.4	1.4	1.0	444	64	977	4.7	349	50	0.00	
130	86	200004120916	-6.2	-4.9	-3.5	-3.5	-1.4	0.4	1.0	1.9	0	50	978	1.5	0	50	0.00	
130	87	200004120817	-12.1	-11.1	-10.6	-10.3	-6.7	0.8	2.2	2.4	0	40	978	0.8	90	50	0.00	
130	88	200004120342	-6.7	-5.9	-5.4	-5.4	-3.5	0.3	0.9	1.0	44	75	977	0.8	148	50	0.00	
130	89	200004140748	2.8	4.1	4.5	4.6	6.2	0.4	1.1	0.1	420	49	975	4.4	215	50	0.00	
130	90	200004110452	-1.8	-1.3	-0.8	-0.7	0.5	0.4	1.1	-0.2	170	86	963	0.1	119	9	0.00	
130	91	200004140104	-4.3	-3.7	-3.4	-3.4	-2.6	0.2	0.4	-0.4	43	96	967	1.5	233	0	0.00	
130	92	200004113144	2.4	2.8	3.1	3.2	5.2	0.3	0.8	1.2	326	47	968	3.0	302	50	0.00	
130	93	200004113104	2.7	3.3	3.6	3.7	5.5	0.3	0.7	1.4	307	64	969	2.3	279	50	0.00	
130	94	200004110512	-3.5	-3.7	-3.3	-3.3	-0.1	0.5	1.5	1.0	0	70	970	0.0	90	50	0.00	
130	95	200004120128	-5.5	-4.9	-4.6	-4.6	-3.9	0.3	1.0	2.1	0	94	973	0.8	90	5	0.00	
130	96	200004120144	-4.9	-4.1	-3.7	-3.6	-3.3	0.3	0.9	0.3	0	87	980	0.8	20	0	0.00	
130	97	200004120157	-4.0	-3.0	-2.5	-2.5	-3.4	0.3	1.0	-0.5	0	89	981	0.4	254	16	0.00	
130	98	200004120312	-7.4	-6.0	-5.4	-5.4	-4.0	0.3	1.2	-0.8	0	92	981	0.2	37	11	0.00	
130	99	200004120315	-7.4	-6.4	-5.2	-5.2	-4.8	0.3	1.0	-0.1	0	88	982	1.5	330	50	0.00	
130	100	200004111127	-8.0	0.1	0.6	1.0	2.4	0.9	2.3	2.8	761	55	984	2.0	384	50	0.00	
130	101	200004141121	-1.5	2.2	2.7	2.7	7.4	0.4	1.5	2.7	1.4	47	982	4.3	281	50	0.00	
130	102	200004141144	-2.9	-2.0	-1.4	-1.4	1.3	0.3	0.9	2.5	10	54	981	1.1	251	50	0.00	
130	103	200004140442	-11.1	-9.3	-8.6	-8.6	-6.0	0.5	1.4	2.3	0	89	977	0.8	90	16	0.00	
130	104	200004140425	-3.9	-2.8	-2.0	-2.0	-3.9	0.3	1.1	1.9	15	90	975	0.5	214	16	0.00	
130	105	200004140123	7.3	8.2	8.6	8.6	6.4	0.3	1.0	0.2	475	50	977	3.5	255	50	0.00	
130	106	200004140112	-4.0	-3.7	-3.5	-3.5	-1.3	0.5	1.5	1.6	320	34	971	3.8	220	50	0.00	
130	107	200004140112	-4.0	-3.7	-3.5	-3.5	-1.3	0.4	1.0	-2.3	0	65	971	0.5	221	50	0.00	
130	108	200004140218	-8.6	-7.7	-6.4	-6.4	-4.4	0.5	1.5	0.1	0	90	971	0.8	90	16	0.00	
130	109	200004120157	-3.3	-2.8	-2.3	-2.3	-0.7	0.4	1.4	0.7	0	88	971	0.9	35	12	0.00	
130	110	200004120315	-3.3	-2.2	-1.6	-1.6	-1.2	0.3	1.0	1.2	0	47	973	1.2	136	50	0.00	
130	111	200004140105	-3.3	-2.1	-1.7	-1.7	-0.3	0.3	0.9	-0.2	0	51	972	1.6	115	50	0.00	

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, LWB DATA

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, LWB DATA

UNIFORM NUMBER	MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MODE TEMPERATURE (Deg. C)	MEDIAN TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE, IN DEGREES (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (INCHES)
100	20	17MAR94:01:20	-11.0	-10.4	-9.8	-9.8	-9.9	-9.3	-8.2	0.3	1.1	0.1	-7.9	0	70	983	0.4	303	0.00
100	31	17MAR94:13:25	-8.4	0.5	1.1	1.2	1.5	2.4	4.2	0.7	2.0	1.4	-3.2	0	72	986	0.4	99	0.00
100	32	17MAR94:15:20	-7.1	-5.4	-4.7	-4.6	-4.6	-4.0	0.5	0.6	1.4	1.1	-10.6	0	87	986	0.5	40	0.00
100	33	17MAR94:16:16	-12.5	-12.0	-11.4	-11.3	-11.4	-10.6	-8.2	0.4	1.3	1.6	-7.9	0	86	986	0.5	280	0.00
100	34	17MAR94:16:25	-9.6	-9.0	-8.4	-8.5	-8.6	-7.9	-7.1	0.2	1.2	0.7	-2.9	126	66	986	1.0	29	0.00
100	35	17MAR94:16:29	-13.5	-12.9	-12.4	-12.5	-12.6	-12.1	-11.4	0.2	0.8	0.1	-2.5	2	92	978	0.6	291	0.00
100	36	17MAR94:16:35	-4.2	-3.5	-3.2	-3.2	-3.3	-2.7	-2.4	0.2	0.8	0.1	-2.4	0	92	979	0.5	283	0.00
100	37	17MAR94:16:41	-5.9	-4.8	-4.4	-4.5	-4.4	-3.8	-3.3	0.3	1.0	-0.3	-3.0	0	91	978	0.0	90	0.00
100	38	17MAR94:16:45	1.6	3.2	5.1	4.7	4.7	4.5	9.4	1.0	3.3	0.2	2.0	541	97	978	0.0	94	0.00
100	39	17MAR94:16:46	1.6	3.2	5.1	4.7	4.7	4.5	9.4	1.0	3.3	0.2	2.0	541	97	978	0.0	94	0.00
100	40	17MAR94:16:47	-4.9	-4.1	-3.4	-3.3	-3.3	-2.6	3.1	0.6	1.5	3.7	-7.5	0	83	974	0.0	90	0.00
100	41	17MAR94:16:51	-9.1	-8.3	-7.8	-7.7	-7.8	-7.2	-5.0	0.3	1.1	-0.1	-	0	-	-	-	-	-
100	42	17MAR94:16:53	-1.4	-0.8	-0.5	-0.4	-0.5	0.0	0.4	0.2	0.8	0.2	-0.3	118	89	960	3.3	217	0.00
100	43	17MAR94:16:56	-1.2	-0.4	-0.1	-0.1	-0.1	0.5	0.4	0.2	0.8	0.2	0.4	14	89	960	1.0	232	0.00
100	44	17MAR94:16:59	-2.4	-1.5	-1.0	-1.0	-1.1	-0.4	-0.2	0.3	0.9	-0.0	0.1	0	90	964	1.0	274	0.00
100	45	17MAR94:17:00	-1.6	-1.0	-0.7	-0.7	-0.8	-0.3	0.2	0.2	0.7	0.2	-0.1	0	94	964	1.0	274	0.00
100	46	17MAR94:17:01	-3.3	-2.6	-2.5	-2.5	-2.5	-2.1	-1.6	0.2	0.7	0.1	-2.1	134	81	960	4.0	364	0.00
100	47	17MAR94:17:02	-5.3	-4.5	-4.2	-4.2	-4.1	-3.1	-2.0	0.5	1.5	1.0	-5.1	403	66	962	6.2	354	0.00
100	48	17MAR94:17:03	-16.0	-15.0	-14.6	-14.6	-14.7	-16.2	-13.7	0.3	0.9	-0.1	-12.6	0	61	970	6.7	0	0.00
100	49	17MAR94:17:04	-16.0	-15.0	-14.6	-14.6	-14.7	-16.2	-13.7	0.3	0.9	-0.1	-12.6	0	61	970	6.7	0	0.00
100	50	17MAR94:17:05	-16.0	-15.0	-14.6	-14.6	-14.7	-16.2	-13.7	0.3	0.9	-0.1	-12.6	0	61	970	6.7	0	0.00
100	51	17MAR94:17:06	-11.1	-10.4	-9.8	-9.9	-11.0	-11.2	-10.6	0.2	0.7	0.1	-10.6	19	47	974	6.1	321	0.00
100	52	17MAR94:17:07	-13.2	-12.2	-11.8	-11.7	-11.8	-11.2	-10.6	0.2	0.7	0.1	-11.2	406	41	972	1.0	280	0.00
100	53	17MAR94:17:08	-9.9	-9.0	-8.4	-8.5	-8.5	-7.4	-6.4	0.4	2.0	0.9	-10.0	335	42	972	1.3	299	0.00
100	54	17MAR94:17:09	-6.3	-5.4	-4.7	-4.6	-4.6	-3.4	-2.4	0.6	1.9	0.7	-6.0	335	42	972	1.3	299	0.00
100	55	17MAR94:17:10	-2.7	-2.0	-1.3	-1.3	-1.2	-0.8	3.0	0.7	2.0	2.3	-2.4	36	36	966	1.7	239	0.00
100	56	17MAR94:17:11	-3.7	-2.9	-2.4	-2.4	-2.4	-2.1	-1.7	0.2	0.8	0.1	-4.5	76	39	966	0.8	239	0.00
100	57	17MAR94:17:12	-8.2	-7.2	-7.1	-7.1	-7.2	-6.8	-6.3	0.2	0.7	-0.3	-6.3	0	92	955	2.3	34	0.00
100	58	17MAR94:17:13	-6.4	-5.7	-5.1	-5.1	-5.2	-4.8	-4.3	0.3	1.0	-0.3	-4.5	10	77	943	1.9	332	0.00
100	59	17MAR94:17:14	-9.6	-8.6	-8.4	-8.4	-8.7	-8.2	-5.9	0.3	0.9	-1.6	-5.3	0	77	943	1.9	332	0.00
100	60	17MAR94:17:15	-12.2	-10.9	-10.0	-10.1	-10.3	-9.5	-7.2	0.5	1.5	-1.9	-4.4	0	86	944	1.6	317	0.00
100	61	17MAR94:17:16	-15.8	-14.6	-13.9	-13.8	-13.8	-13.3	-11.0	0.4	1.2	-2.1	-13.0	0	76	947	0.0	90	0.00
100	62	17MAR94:17:17	-23.3	-20.5	-17.3	-17.3	-17.4	-16.4	-15.4	0.8	2.1	-2.9	-17.0	0	79	947	0.0	90	0.00
100	63	17MAR94:17:18	-25.3	-22.5	-19.3	-19.3	-19.4	-18.4	-15.4	0.8	2.1	-2.9	-17.0	0	79	947	0.0	90	0.00
100	64	17MAR94:17:19	-5.4	-4.6	-4.4	-4.4	-4.8	-4.1	0.0	0.6	1.7	-1.5	0.3	64	40	940	3.1	300	0.00
100	65	17MAR94:17:20	-20.1	-17.7	-17.1	-17.0	-17.1	-16.3	-12.7	0.5	1.5	1.5	-16.7	0	84	944	1.0	32	0.00
100	66	17MAR94:17:21	-20.1	-17.7	-17.1	-17.0	-17.1	-16.3	-12.7	0.5	1.5	1.5	-16.7	0	84	944	1.0	32	0.00
100	67	17MAR94:17:22	-2.1	5.0	5.9	6.0	5.0	6.4	7.4	0.5	3.5	-1.1	-6.5	113	34	946	2.0	137	0.00
100	68	17MAR94:17:23	-2.2	-1.2	-0.9	-0.8	-0.9	-0.5	-0.1	0.2	0.7	-0.0	-0.1	0	40	947	1.6	137	0.00
100	69	17MAR94:17:24	-2.6	-1.9	-1.4	-1.5	-1.4	-1.2	-0.8	0.2	0.7	0.5	-0.9	0	46	940	1.4	130	0.00
100	70	17MAR94:17:25	-2.5	-1.7	-1.4	-1.4	-1.7	-1.3	-1.0	0.2	0.7	0.0	-1.1	1	46	940	1.4	130	0.00
100	71	17MAR94:17:26	-0.3	-5.9	-5.4	-5.3	-5.3	-4.3	-2.5	0.5	1.4	0.1	-3.0	0	95	944	0.4	199	0.00

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, LWB DATA

# GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, SWB DATA

MISSION NUMBER	MISSION NAME	ALTIMETER TEMPERATURE (Deg. C)	5-SECONDLY TEMPERATURE (Deg. C)	ROSE TEMPERATURE (Deg. C)	WIND TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-SECONDLY TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RAINFALL RATE (mm/hr)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (mmHg)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	VISIBILITY (MILES)	PRECIPITATION (mm/hr)
109	GRAYLING:23:15	-4.9	-3.7	-3.1	-3.6	-3.1	-2.2	-1.2	0.5	1.5	75	969	4.4	310	30	0.00
110	GRAYLING:23:31	-5.3	-4.1	-3.4	-3.4	-3.4	-2.6	-1.9	0.5	1.4	75	969	4.7	280	50	0.00
121	GRAYLING:08:19	-7.4	-4.1	-5.4	-5.3	-5.5	-4.4	-3.4	0.5	1.7	81	972	2.3	300	5	0.00
122	GRAYLING:14:05	5.5	7.3	8.9	9.8	9.1	11.6	17.9	1.4	4.3	34	972	3.3	280	50	0.00
123	GRAYLING:14:24	6.7	2.5	2.9	3.1	2.9	3.7	4.4	1.4	4.3	34	972	3.1	299	50	0.00
124	GRAYLING:17:25	-5.3	-4.7	-4.6	-4.6	-4.6	-4.7	-4.7	0.6	1.6	36	972	6.9	264	50	0.00
125	GRAYLING:18:13	-5.5	-4.4	-3.4	-3.4	-3.4	-2.6	-1.1	0.6	1.6	40	971	6.9	264	50	0.00
126	GRAYLING:18:49	7.4	6.2	8.6	8.9	8.1	9.7	16.4	0.4	1.6	44	971	1.6	221	50	0.00
127	GRAYLING:19:12	7.4	6.2	8.6	8.9	8.1	9.7	16.4	0.4	1.6	44	971	1.6	221	50	0.00
128	GRAYLING:19:27	7.4	6.2	8.6	8.9	8.1	9.7	16.4	0.4	1.6	44	971	1.6	221	50	0.00
129	GRAYLING:19:34	-4.3	-3.9	-2.3	-2.3	-2.3	-1.2	-0.4	0.5	1.6	93	967	5.8	210	50	0.00
130	GRAYLING:19:36	-2.9	-1.8	-0.8	-0.7	-0.8	0.2	3.4	0.6	2.8	82	972	2.1	3	50	0.00
131	GRAYLING:17:44	-4.6	-2.7	-1.8	-1.8	-1.9	-1.0	-0.1	0.6	1.8	72	973	2.0	7	50	0.00
132	GRAYLING:18:19	-4.4	-3.1	-2.3	-2.2	-2.3	-1.2	-0.2	0.6	1.9	74	973	1.4	7	50	0.00
133	GRAYLING:18:48	-6.2	1.4	2.4	2.5	2.5	3.9	7.3	0.7	2.3	61	976	3.8	91	50	0.00
134	GRAYLING:19:56	-6.3	1.2	2.6	2.4	2.5	3.8	5.5	0.8	2.4	61	976	3.8	91	50	0.00
135	GRAYLING:14:23	1.3	2.7	4.0	4.1	4.1	4.0	9.4	1.6	3.2	48	976	4.7	32	50	0.00
136	GRAYLING:17:34	-6.1	0.8	1.8	1.8	1.7	2.7	4.2	0.8	1.9	43	976	2.4	30	50	0.00
137	GRAYLING:18:41	-3.0	-1.4	-0.7	-0.3	-0.2	2.4	6.8	1.3	4.0	70	982	1.1	209	50	0.00
138	GRAYLING:18:18	4.3	6.0	7.1	8.0	8.2	11.0	17.5	1.4	5.0	55	983	2.1	237	50	0.00
139	GRAYLING:19:01	-3.4	0.8	1.9	2.0	1.8	2.9	3.5	0.7	2.0	51	983	0.9	256	50	0.00
140	GRAYLING:18:24	-4.0	-4.0	-3.0	-3.0	-3.3	-2.2	-1.1	0.4	1.8	79	984	0.4	4	50	0.00
141	GRAYLING:13:55	3.2	6.5	7.5	7.2	7.1	7.9	8.7	0.4	1.4	91	977	1.3	250	50	0.00
142	GRAYLING:14:37	3.0	6.0	6.4	6.7	6.4	7.4	8.4	0.5	1.4	91	977	1.3	250	50	0.00
143	GRAYLING:18:43	2.7	4.1	4.8	4.9	4.8	5.5	6.3	0.4	1.4	91	963	1.4	244	4	0.00
144	GRAYLING:19:15	19.8	20.9	21.4	21.1	21.2	22.6	25.9	0.9	2.0	31	963	2.8	271	50	0.00
145	GRAYLING:14:24	7.8	6.9	9.3	9.3	9.4	10.7	16.7	0.4	1.2	73	963	0.8	344	50	0.00
176	GRAYLING:18:25	10.1	10.9	11.3	11.4	11.4	12.5	12.5	0.4	1.2	68	960	2.5	344	50	0.00
177	GRAYLING:18:14	10.6	11.4	12.2	12.2	12.2	12.8	13.5	0.4	1.1	79	956	2.7	387	44	0.00
178	GRAYLING:14:14	12.2	13.0	13.5	13.4	13.4	14.1	14.5	0.3	1.1	94	954	3.5	390	50	0.00

STATION NUMBER	MISSION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE_90 (Deg. C)	WIND_SPEED (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (KNOTS)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (CM/M)
848	72	200004121225	-5.3	-3.7	-3.8	-1.9	-0.4	0.6	1.8	0.0	-3.2	0	92	946	0.5	190	42	0.00
848	73	200004121335	-6.4	-4.6	-5.4	-4.3	-2.4	0.7	2.3	0.4	-7.2	0	92	946	0.0	00	50	0.00
848	74	200004121500	-6.7	-4.9	-5.5	-4.3	-2.4	0.8	2.3	0.4	-7.2	0	92	946	0.0	00	50	0.00
848	75	200004121619	9.4	12.7	13.3	16.4	17.3	0.8	3.3	-0.3	16.4	737	36	946	6.8	264	50	0.00
848	76	200004121833	3.9	6.8	7.0	10.0	10.0	0.9	2.9	-0.5	11.0	403	34	942	5.9	220	50	0.00
848	77	200004121917	6.8	10.4	11.0	14.0	14.3	0.8	2.8	-0.5	8.9	402	0	942	1.4	222	50	0.00
848	78	200004121918	2.7	4.2	5.0	7.7	6.8	0.5	1.5	-0.8	4.0	0	31	945	2.1	99	50	0.00
848	79	200004122100	0.1	1.3	1.9	2.7	3.7	0.5	1.5	-0.8	0.0	0	73	945	1.9	42	50	0.00
848	80	200004122100	0.5	1.4	2.2	2.9	3.9	0.4	1.4	-0.8	0.0	20	94	957	1.3	267	13	0.00
848	81	200004122100	-0.4	0.7	1.3	2.3	3.1	0.5	1.6	0.1	-0.3	206	79	942	5.2	307	13	0.00
848	82	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	83	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	84	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	85	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	86	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	87	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	88	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	89	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	90	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	91	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	92	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	93	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	94	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	95	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	96	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	97	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	98	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	99	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	100	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	101	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	102	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	103	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	104	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	105	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	106	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	107	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	108	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	109	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	110	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	111	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	112	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	113	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	114	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	115	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	116	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	117	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	118	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	119	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00
848	120	200004122131	-0.4	-0.7	-0.1	-0.1	-0.1	0.5	1.7	0.2	-0.1	0	72	972	4.6	306	50	0.00

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, SWB DATA

MISSION NUMBER	MISSION	IMAGE DATE/TIME	MINIMUM TEMPERATURE (deg. C)	5-PERCENTILE TEMPERATURE (deg. C)	MEAN TEMPERATURE (deg. C)	95-PERCENTILE TEMPERATURE (deg. C)	MINIMUM TEMPERATURE (deg. C)	STANDARD DEVIATION (deg. C)	BASED ON REMOTES (deg. C)	AIR TEMPERATURE (deg. C)	SOLAR RADIATION (WATT/CM <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	MAGNETIC PRESSURE (MILLIBARS)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	VISIBILITY (M)	PRECIPITATION (MM)
000	29	190004-07:39	-9.8	-8.5	-7.7	-7.5	-7.7	0.6	1.8	0.5	0	78	943	0.5	353	30	0.00
000	31	190004-13:35	1.0	2.0	3.3	3.3	3.3	1.0	3.1	1.6	0	-	-	-	-	-	-
000	32	190004-19:09	-6.5	-4.3	-3.6	-3.6	-3.6	0.6	1.9	-0.7	0	72	960	0.0	90	50	0.00
000	33	190004-02:10	-11.0	-10.3	-9.4	-9.2	-9.4	0.7	2.2	0.4	0	87	966	0.5	45	50	0.00
000	34	190004-08:25	-8.7	-7.4	-6.5	-6.5	-6.5	0.5	2.0	0.3	0	86	966	0.5	230	50	0.00
000	35	190004-09:51	-2.6	-1.5	-0.5	-0.7	-0.5	1.1	0.8	-0.0	126	92	963	1.0	176	50	0.00
000	36	190004-10:29	-1.0	-0.5	0.1	0.2	0.1	1.0	0.4	0.1	2	92	972	0.0	291	3	0.00
000	37	190004-09:25	-4.0	-2.9	-2.2	-2.2	-2.2	0.5	1.5	0.4	0	92	979	0.5	283	2	0.00
000	38	190004-02:25	-4.3	-3.3	-2.7	-2.4	-2.4	0.5	1.5	-0.5	0	91	979	0.0	90	2	0.00
000	39	190004-14:46	2.7	4.2	6.2	6.2	6.2	1.4	4.4	0.4	541	56	976	0.0	196	50	0.00
000	40	190004-10:47	-4.0	-2.7	-1.9	-2.0	-1.9	0.5	1.6	0.0	0	83	976	0.0	90	50	0.00
000	41	190004-05:13	-7.9	-6.4	-5.5	-5.4	-5.5	0.6	2.0	0.0	-	-	-	-	-	-	-
000	42	190004-10:13	-1.1	0.3	1.1	1.1	1.1	2.0	0.5	1.7	-0.1	118	958	3.3	217	12	0.00
000	43	190004-08:01	-8.2	1.0	1.7	1.7	1.7	0.5	1.5	0.3	16	89	956	1.5	232	9	0.00
000	44	190004-19:43	-1.5	-0.2	0.5	0.4	0.5	1.5	0.5	0.3	0	90	956	1.5	234	50	0.00
000	45	190004-10:30	-1.3	-0.1	0.7	0.8	0.7	1.6	2.5	0.5	0	90	956	1.0	276	-	0.00
000	46	190004-07:48	-2.5	-1.1	-0.3	-0.3	-0.3	0.6	1.5	0.1	136	61	958	4.0	344	-	0.00
000	47	190004-13:06	-4.6	-2.9	-2.0	-1.8	-1.9	0.3	0.8	2.5	0.4	40	942	4.2	326	-	0.00
000	48	190004-10:16	-15.0	-12.9	-12.2	-12.0	-12.2	0.8	2.1	0.5	720	40	979	0.0	349	50	0.00
000	49	190004-13:52	-0.0	-0.0	-4.0	-4.0	-4.0	3.1	1.4	0.5	0	41	979	0.0	349	50	0.00
000	50	190004-17:02	-9.2	-5.6	-3.3	-2.9	-2.7	0.8	4.3	0.5	260	40	973	5.0	354	50	0.00
000	51	190004-10:21	-12.2	-9.9	-6.9	-6.9	-6.9	0.7	2.1	-0.2	19	47	973	6.1	321	50	0.00
000	52	190004-09:05	-7.5	-5.5	-4.1	-3.8	-3.7	0.8	4.7	1.2	146	61	973	1.0	380	50	0.00
000	53	190004-10:12	-5.2	-3.6	-2.7	-2.2	-2.2	0.5	3.5	0.5	535	42	973	1.5	329	50	0.00
000	54	190004-14:19	-0.0	0.6	1.9	1.9	1.9	0.9	2.9	0.1	550	36	969	0.0	299	50	0.00
000	55	190004-17:02	-2.9	-1.6	-0.8	-0.8	-0.8	0.5	1.7	0.0	78	92	966	0.0	299	50	0.00
000	56	190004-07:55	-7.2	-4.5	-3.2	-3.0	-3.2	0.6	1.8	-0.3	7	73	955	2.3	36	0	0.00
000	57	190004-10:16	-4.0	-2.5	-1.7	-1.7	-1.7	0.6	2.0	-0.2	10	73	962	3.2	332	50	0.00
000	58	190004-19:25	-9.8	-8.0	-6.7	-6.7	-6.7	0.6	1.9	-1.1	0	77	963	1.9	317	50	0.00
000	59	190004-10:52	-9.4	-7.6	-5.6	-5.5	-5.6	0.6	2.0	-0.7	0	85	964	1.6	317	50	0.00
000	60	190004-02:37	-19.9	-16.5	-14.4	-14.2	-14.4	0.9	2.7	-0.5	0	76	967	0.0	90	50	0.00
000	61	190004-02:26	-19.2	-15.7	-14.6	-14.2	-14.6	0.9	2.7	-0.5	0	79	967	0.0	90	50	0.00
000	62	190004-10:13	1.3	3.9	5.6	5.6	5.6	1.2	3.8	0.2	437	36	968	4.0	333	50	0.00
000	63	190004-16:13	1.3	3.9	5.6	5.6	5.6	0.8	2.7	-0.1	84	40	968	3.1	300	50	0.00
000	64	190004-17:39	-1.6	1.1	2.0	2.4	2.4	0.5	0.8	0.2	0	86	971	1.0	12	50	0.00
000	65	190004-07:10	-17.0	-15.0	-13.0	-13.0	-13.0	0.8	2.7	0.4	113	36	968	2.0	157	50	0.00
000	66	190004-17:25	3.2	6.3	7.4	7.4	7.4	0.5	1.9	-0.6	0	86	968	2.0	157	50	0.00
000	67	190004-12:47	-1.2	0.3	1.0	1.1	1.0	0.5	1.5	0.1	0	86	967	1.6	137	50	0.00
000	68	190004-06:39	-1.6	-0.4	0.3	0.2	0.3	0.5	1.4	-0.3	0	86	967	1.6	137	50	0.00
000	69	190004-05:51	-2.0	-0.8	-0.2	-0.1	-0.2	0.5	1.5	-0.2	1	90	950	1.1	41	2	0.00
000	70	190004-05:51	-2.0	-0.8	-0.2	-0.1	-0.2	0.5	1.5	-0.2	0	90	950	1.1	41	2	0.00
000	71	190004-12:13	-5.5	-4.0	-3.3	-3.1	-3.3	0.6	1.8	0.2	0	95	964	0.6	199	5	0.00

GRAYLING II, CONIFEROUS (PINE) TREE FEATURE, SWB DATA



## GRAYLING II, CONIFEROUS (PINE) TREELINE FEATURE, LWB DATA

STATION	IMAGE DATE/TIME	RELATIVE TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RANGE, 90 (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (W/M <sup>2</sup> )	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	VISUAL- RANGE (M)	PRECIPIT- TATION (INCHES)
117	02/09/95 10:15	-3.6	-2.5	-2.0	-1.0	-0.4	0.3	1.1	-0.8	0	51	972	1.4	115	30	0.00
118	02/09/95 10:30	-4.5	-3.7	-3.2	-2.2	-2.1	0.3	1.8	-2.1	0	46	968	7.8	325	45	0.00
119	02/09/95 10:45	-5.6	-4.8	-4.5	-3.9	-3.5	0.3	0.9	-3.9	0	75	969	4.8	310	50	0.00
120	02/09/95 10:59	-6.5	-5.7	-5.2	-4.5	-3.9	0.3	1.8	-4.2	0	81	972	2.3	302	5	0.00
121	02/09/95 11:15	-7.7	-7.2	-6.8	-6.1	-5.5	1.4	4.9	2.5	700	34	972	3.3	290	50	0.00
122	02/09/95 11:30	-8.4	-7.7	-7.1	-6.4	-5.8	0.5	1.5	2.5	34	32	972	3.1	299	50	0.00
123	02/09/95 11:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	0	36	972	0.9	264	50	0.00
124	02/09/95 11:59	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	0	40	971	0.9	265	50	0.00
125	02/09/95 12:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	25	86	971	1.0	271	50	0.00
126	02/09/95 12:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	250	44	970	3.5	253	50	0.00
127	02/09/95 12:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	120	34	967	5.0	210	50	0.00
128	02/09/95 13:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	0	95	967	-	-	7	0.00
129	02/09/95 13:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	314	42	972	2.1	3	50	0.00
130	02/09/95 13:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	91	72	972	2.0	7	50	0.00
131	02/09/95 13:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	43	76	973	1.5	45	50	0.00
132	02/09/95 14:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	407	67	970	1.0	45	50	0.00
133	02/09/95 14:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	495	60	970	4.5	35	50	0.00
134	02/09/95 14:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
135	02/09/95 14:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
136	02/09/95 15:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
137	02/09/95 15:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
138	02/09/95 15:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
139	02/09/95 15:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
140	02/09/95 16:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
141	02/09/95 16:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
142	02/09/95 16:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
143	02/09/95 16:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
144	02/09/95 17:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
145	02/09/95 17:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
146	02/09/95 17:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
147	02/09/95 17:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
148	02/09/95 18:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
149	02/09/95 18:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
150	02/09/95 18:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
151	02/09/95 18:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
152	02/09/95 19:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
153	02/09/95 19:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
154	02/09/95 19:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
155	02/09/95 19:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
156	02/09/95 20:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
157	02/09/95 20:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
158	02/09/95 20:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
159	02/09/95 20:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
160	02/09/95 21:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
161	02/09/95 21:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
162	02/09/95 21:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
163	02/09/95 21:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
164	02/09/95 22:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
165	02/09/95 22:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
166	02/09/95 22:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
167	02/09/95 22:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
168	02/09/95 23:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
169	02/09/95 23:15	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
170	02/09/95 23:30	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
171	02/09/95 23:45	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00
172	02/09/95 24:00	-9.5	-8.1	-7.1	-6.2	-5.6	0.5	1.5	2.5	545	48	970	4.7	32	50	0.00

## GRAYLING II, CONIFEROUS (PINE) TREELINE FEATURE, LWB DATA

STATION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	AVERAGE SCUMNESS (Deg. C)	AIR TEMPERATURE (Deg. C)	SOLAR RADIATION (WATT/2)	RELATIVE HUMIDITY (PERCENT)	BAROMETRIC PRESSURE (MILLIBARS)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	WIND SPEED (MPH)	WIND DIRECTION (DEGREES)	PRECIPITATION (INCHES)
LWB 71	2/20/09:12:13	-7.3	-5.8	-4.6	-3.9	-3.3	0.3	1.7	-3.0	0	95	964	0.4	199	0.4	5	0.00
LWB 72	2/20/09:12:25	-7.1	-5.5	-4.4	-3.8	-3.2	0.5	1.7	-3.2	0	92	963	0.4	199	0.4	42	0.00
LWB 73	2/20/09:12:35	-6.8	-5.2	-4.0	-3.4	-2.8	0.6	2.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 74	2/20/09:12:45	-6.5	-4.9	-3.7	-3.1	-2.5	0.7	2.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 75	2/20/09:12:55	-6.2	-4.6	-3.4	-2.8	-2.2	0.8	2.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 76	2/20/09:13:05	-6.0	-4.4	-3.2	-2.6	-2.0	0.9	3.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 77	2/20/09:13:15	-5.8	-4.2	-3.0	-2.4	-1.8	1.0	3.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 78	2/20/09:13:25	-5.6	-4.0	-2.8	-2.2	-1.6	1.1	4.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 79	2/20/09:13:35	-5.4	-3.8	-2.6	-2.0	-1.4	1.2	4.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 80	2/20/09:13:45	-5.2	-3.6	-2.4	-1.8	-1.2	1.3	4.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 81	2/20/09:13:55	-5.0	-3.4	-2.2	-1.6	-1.0	1.4	5.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 82	2/20/09:14:05	-4.8	-3.2	-2.0	-1.4	-0.8	1.5	5.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 83	2/20/09:14:15	-4.6	-3.0	-1.8	-1.2	-0.6	1.6	6.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 84	2/20/09:14:25	-4.4	-2.8	-1.6	-1.0	-0.4	1.7	6.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 85	2/20/09:14:35	-4.2	-2.6	-1.4	-0.8	-0.2	1.8	6.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 86	2/20/09:14:45	-4.0	-2.4	-1.2	-0.6	0.0	1.9	7.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 87	2/20/09:14:55	-3.8	-2.2	-1.0	-0.4	0.2	2.0	7.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 88	2/20/09:15:05	-3.6	-2.0	-0.8	-0.2	0.4	2.1	8.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 89	2/20/09:15:15	-3.4	-1.8	-0.6	-0.0	0.6	2.2	8.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 90	2/20/09:15:25	-3.2	-1.6	-0.4	0.2	0.8	2.3	8.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 91	2/20/09:15:35	-3.0	-1.4	-0.2	0.4	1.0	2.4	9.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 92	2/20/09:15:45	-2.8	-1.2	-0.0	0.6	1.2	2.5	9.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 93	2/20/09:15:55	-2.6	-1.0	0.2	0.8	1.4	2.6	10.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 94	2/20/09:16:05	-2.4	-0.8	0.4	1.0	1.6	2.7	10.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 95	2/20/09:16:15	-2.2	-0.6	0.6	1.2	1.8	2.8	10.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 96	2/20/09:16:25	-2.0	-0.4	0.8	1.4	2.0	2.9	11.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 97	2/20/09:16:35	-1.8	-0.2	1.0	1.6	2.2	3.0	11.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 98	2/20/09:16:45	-1.6	0.0	1.2	1.8	2.4	3.1	12.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 99	2/20/09:16:55	-1.4	0.2	1.4	2.0	2.6	3.2	12.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 100	2/20/09:17:05	-1.2	0.4	1.6	2.2	2.8	3.3	12.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 101	2/20/09:17:15	-1.0	0.6	1.8	2.4	3.0	3.4	13.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 102	2/20/09:17:25	-0.8	0.8	2.0	2.6	3.2	3.5	13.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 103	2/20/09:17:35	-0.6	1.0	2.2	2.8	3.4	3.6	14.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 104	2/20/09:17:45	-0.4	1.2	2.4	3.0	3.6	3.7	14.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 105	2/20/09:17:55	-0.2	1.4	2.6	3.2	3.8	3.8	14.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 106	2/20/09:18:05	0.0	1.6	2.8	3.4	4.0	3.9	15.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 107	2/20/09:18:15	0.2	1.8	3.0	3.6	4.2	4.0	15.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 108	2/20/09:18:25	0.4	2.0	3.2	3.8	4.4	4.1	16.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 109	2/20/09:18:35	0.6	2.2	3.4	4.0	4.6	4.2	16.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 110	2/20/09:18:45	0.8	2.4	3.6	4.2	4.8	4.3	16.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 111	2/20/09:18:55	1.0	2.6	3.8	4.4	5.0	4.4	17.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 112	2/20/09:19:05	1.2	2.8	4.0	4.6	5.2	4.5	17.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 113	2/20/09:19:15	1.4	3.0	4.2	4.8	5.4	4.6	18.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 114	2/20/09:19:25	1.6	3.2	4.4	5.0	5.6	4.7	18.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 115	2/20/09:19:35	1.8	3.4	4.6	5.2	5.8	4.8	18.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 116	2/20/09:19:45	2.0	3.6	4.8	5.4	6.0	4.9	19.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 117	2/20/09:19:55	2.2	3.8	5.0	5.6	6.2	5.0	19.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 118	2/20/09:20:05	2.4	4.0	5.2	5.8	6.4	5.1	20.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 119	2/20/09:20:15	2.6	4.2	5.4	6.0	6.6	5.2	20.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 120	2/20/09:20:25	2.8	4.4	5.6	6.2	6.8	5.3	20.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 121	2/20/09:20:35	3.0	4.6	5.8	6.4	7.0	5.4	21.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 122	2/20/09:20:45	3.2	4.8	6.0	6.6	7.2	5.5	21.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 123	2/20/09:20:55	3.4	5.0	6.2	6.8	7.4	5.6	22.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 124	2/20/09:21:05	3.6	5.2	6.4	7.0	7.6	5.7	22.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 125	2/20/09:21:15	3.8	5.4	6.6	7.2	7.8	5.8	22.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 126	2/20/09:21:25	4.0	5.6	6.8	7.4	8.0	5.9	23.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 127	2/20/09:21:35	4.2	5.8	7.0	7.6	8.2	6.0	23.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 128	2/20/09:21:45	4.4	6.0	7.2	7.8	8.4	6.1	24.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 129	2/20/09:21:55	4.6	6.2	7.4	8.0	8.6	6.2	24.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 130	2/20/09:22:05	4.8	6.4	7.6	8.2	8.8	6.3	24.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 131	2/20/09:22:15	5.0	6.6	7.8	8.4	9.0	6.4	25.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 132	2/20/09:22:25	5.2	6.8	8.0	8.6	9.2	6.5	25.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 133	2/20/09:22:35	5.4	7.0	8.2	8.8	9.4	6.6	26.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 134	2/20/09:22:45	5.6	7.2	8.4	9.0	9.6	6.7	26.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 135	2/20/09:22:55	5.8	7.4	8.6	9.2	9.8	6.8	26.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 136	2/20/09:23:05	6.0	7.6	8.8	9.4	10.0	6.9	27.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 137	2/20/09:23:15	6.2	7.8	9.0	9.6	10.2	7.0	27.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 138	2/20/09:23:25	6.4	8.0	9.2	9.8	10.4	7.1	28.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 139	2/20/09:23:35	6.6	8.2	9.4	10.0	10.6	7.2	28.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 140	2/20/09:23:45	6.8	8.4	9.6	10.2	10.8	7.3	28.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 141	2/20/09:23:55	7.0	8.6	9.8	10.4	11.0	7.4	29.3	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 142	2/20/09:24:05	7.2	8.8	10.0	10.6	11.2	7.5	29.7	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 143	2/20/09:24:15	7.4	9.0	10.2	10.8	11.4	7.6	30.1	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 144	2/20/09:24:25	7.6	9.2	10.4	11.0	11.6	7.7	30.5	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 145	2/20/09:24:35	7.8	9.4	10.6	11.2	11.8	7.8	30.9	-3.2	0	92	963	0.4	199	0.4	50	0.00
LWB 146	2/20/09:24:45	8.0	9.6	10.8	11.4	12.0	7.9	31.3									





## GRAYLING II, CONIFEROUS (PINE) TREELINE FEATURE, SWB DATA

STATION	STATION NAME	TIME	TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	STANDARD DEVIATION (Deg. C)	RAINFALL (mm)	AIR TEMPERATURE (Deg. C)	RELATIVE HUMIDITY (PERCENT)	WIND SPEED (m/s)	WIND DIRECTION (DEGREES)	VISIBILITY (m)	PRECIPITATION (mm)
SWB	71	240000:12:13	-5.2	-3.7	-2.7	-2.6	-0.7	0.4	0.1	-3.8	95	0.4	199	5	0.00
SWB	72	240000:12:15	-5.2	-3.3	-2.4	-2.3	-0.3	0.4	0.1	-3.8	92	0.4	199	5	0.00
SWB	73	240000:12:15	-7.7	-6.1	-5.0	-5.0	-2.2	0.8	0.5	-7.2	92	0.4	199	42	0.00
SWB	74	240000:12:15	8.4	11.5	12.9	13.1	17.7	0.9	2.0	10.4	92	0.4	199	30	0.00
SWB	75	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	76	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	77	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	78	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	79	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	80	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	81	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	82	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	83	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	84	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	85	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	86	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	87	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	88	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	89	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	90	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	91	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	92	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	93	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	94	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	95	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	96	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	97	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	98	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	99	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	100	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	101	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	102	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	103	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	104	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	105	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	106	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	107	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	108	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	109	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	110	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	111	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	112	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	113	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	114	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	115	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00
SWB	116	240000:12:15	16.5	13.4	16.3	16.5	20.6	1.0	3.1	11.9	92	0.4	199	30	0.00

GRAYLING II, CONIFEROUS (PINE) TREELINE FEATURE, SWB DATA

STATION NUMBER	IMAGE DATE-TIME	MINIMUM TEMPERATURE (Deg. C)	5-PERCENTILE TEMPERATURE (Deg. C)	MEAN TEMPERATURE (Deg. C)	95-PERCENTILE TEMPERATURE (Deg. C)	MAXIMUM TEMPERATURE (Deg. C)	RELATIVE HUMIDITY (%)	WIND SPEED (km/hr)	WIND DIRECTION (degrees)	VISIBILITY (km)	PRECIPITATION (mm)								
005	117 02/09/01 01:05	-2.2	-4.8	-4.3	-4.2	-4.2	67	1.8	0.5	1.5	-0.3	-0.3	51	972	1.4	118	30	0.00	
006	118 02/09/01 02:30	-3.1	-1.8	-1.2	-1.2	-1.2	64	0.6	0.5	1.5	0.3	-2.1	0	66	966	7.8	325	45	0.00
007	119 02/09/01 02:13	-5.2	-3.7	-3.5	-3.1	-3.1	59	-1.8	0.5	1.5	0.2	-3.9	0	75	960	4.8	319	50	0.00
008	120 02/09/01 02:51	-5.5	-4.4	-3.7	-3.4	-3.4	57	-1.9	0.5	1.6	-0.4	-4.7	0	75	960	4.7	320	50	0.00
009	121 02/09/01 03:19	-7.5	-6.4	-5.8	-5.4	-5.4	48	-3.6	0.5	1.8	-0.8	-6.2	0	81	972	2.3	308	5	0.00
010	122 02/09/01 04:05	4.4	4.0	7.1	7.7	8.3	13.1	21.9	2.3	7.1	1.8	2.9	789	972	3.3	289	50	0.00	
011	123 02/09/01 05:36	0.8	2.9	3.7	3.9	3.8	5.8	8.6	0.7	2.1	0.5	2.5	34	972	3.1	289	50	0.00	
012	02/09/01 07:25	-3.8	-0.3	0.7	0.7	0.5	1.4	2.6	0.5	1.8	-0.8	0.8	0	36	972	0.9	285	50	0.00
013	02/09/01 08:53	-7.7	-6.9	-5.2	-4.9	-5.8	-3.7	-2.2	0.7	2.2	0.3	-6.5	0	49	971	0.9	285	50	0.00
014	02/09/01 10:40	-5.5	-3.8	-3.8	-2.9	-3.0	-1.9	-0.4	0.4	2.0	-0.8	-4.8	25	66	971	0.9	285	50	0.00
015	02/09/01 10:52	4.8	6.8	6.7	6.9	6.8	7.6	8.4	0.5	1.5	-0.4	4.5	236	44	970	3.5	231	50	0.00
016	02/09/01 11:27	6.4	8.2	8.9	8.9	8.9	9.5	10.4	0.4	1.3	0.0	8.3	120	34	967	5.8	214	50	0.00
017	02/09/01 13:26	-3.4	-1.9	-1.1	-1.0	-1.1	0.1	1.4	0.6	2.0	0.5	-2.8	314	62	972	2.1	211	2	0.00
018	02/09/01 17:44	-4.1	-2.7	-1.8	-1.9	-1.9	-0.8	0.1	0.6	1.9	0.1	-2.8	91	72	973	2.6	210	7	0.00
019	02/09/01 18:19	-6.9	-3.1	-2.5	-2.2	-2.2	-1.1	0.2	0.6	2.8	-0.6	-3.1	43	76	973	1.4	210	7	0.00
020	02/09/01 19:19	-8.7	1.7	2.4	2.9	2.9	4.5	9.4	0.9	2.8	0.4	-3.9	407	62	973	1.9	43	30	0.00
021	02/09/01 14:23	0.6	2.5	3.8	4.2	4.5	4.1	9.5	1.8	3.8	0.6	-2.3	565	48	976	4.5	35	30	0.00
022	02/09/01 11:34	-1.2	0.3	1.3	1.2	1.2	2.5	7.8	1.8	5.3	1.8	-0.2	565	48	976	4.7	32	30	0.00
023	127 02/09/01 07:41	-1.6	-0.2	1.8	1.1	1.6	2.3	5.4	0.8	2.5	0.3	-0.9	100	43	976	2.6	30	30	0.00
024	128 02/09/01 10:10	2.9	5.5	7.3	7.7	8.1	12.3	21.5	2.3	4.8	2.0	-2.3	386	79	982	1.1	309	50	0.00
025	129 02/09/01 19:05	-1.8	1.2	2.2	2.3	2.8	3.1	4.1	0.6	1.9	-0.3	2.1	180	33	982	2.1	327	50	0.00
026	02/09/01 18:10	-5.2	-3.6	-2.7	-2.6	-2.7	-1.4	-0.1	0.6	1.9	-0.8	-4.7	5	41	983	0.9	306	50	0.00
027	133 02/09/01 13:56	5.3	6.3	7.8	7.1	7.8	7.8	8.7	0.5	1.5	-0.3	4.4	79	99	986	0.6	4	50	0.00
028	134 02/09/01 15:55	4.4	6.8	6.8	6.8	6.7	7.5	8.3	0.5	1.4	-0.2	5.4	55	91	997	1.5	250	50	0.00
029	140 02/09/01 16:37	4.4	6.8	6.8	6.8	6.7	7.5	8.3	0.5	1.4	-0.2	5.4	55	91	997	1.5	250	50	0.00
030	141 02/09/01 18:05	3.5	4.8	5.3	5.4	5.3	6.2	6.9	0.4	1.4	0.3	4.7	0	90	980	2.6	256	50	0.00
031	142 02/09/01 18:43	3.1	4.2	4.9	5.8	4.9	5.8	6.6	0.4	1.4	-0.1	4.3	0	91	981	1.4	244	4	0.00
032	143 02/09/01 19:15	10.1	19.5	20.3	21.2	21.2	26.3	32.4	1.4	4.9	1.4	19.2	443	32	983	2.6	271	50	0.00
033	144 02/09/01 14:36	10.8	20.3	21.1	21.3	21.3	23.9	33.5	1.3	4.8	2.1	19.2	425	31	984	2.1	233	50	0.00
034	145 02/09/01 16:36	7.3	8.8	9.4	9.5	9.4	10.2	10.9	0.4	1.4	-0.5	8.9	0	72	983	0.6	164	50	0.00
035	146 02/09/01 18:26	9.9	11.4	11.5	11.4	11.4	12.8	12.8	0.4	1.2	-0.3	10.5	4	68	986	2.5	164	50	0.00
036	147 02/09/01 18:25	10.7	11.4	12.2	12.2	12.2	12.8	13.4	0.4	1.2	0.0	11.4	7	79	990	2.7	167	44	0.00
037	171 02/09/01 14:14	12.2	13.6	13.5	13.5	13.5	14.1	14.7	0.3	1.1	-0.2	13.1	78	84	994	3.5	198	50	0.00